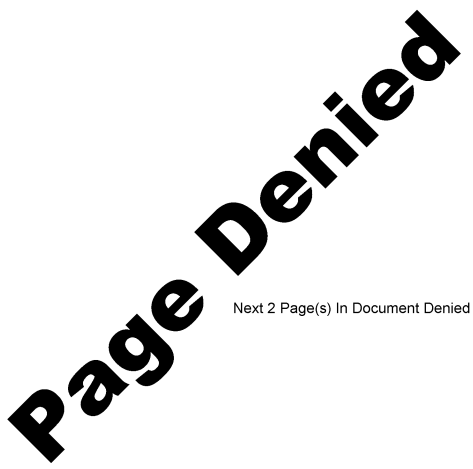
50X1-HUM



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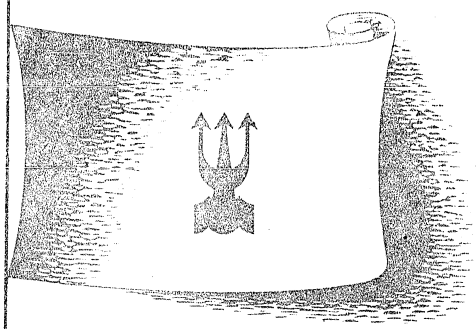
SIGMA LUTIN

STROJEXPORT

PRAHA - ČESKOSLOVENSKO



STROJEXPORT

PŘEHLEDNÝ KATALOG ČESKOSLOVENSKÉ ČERPACÍ TECHNIKY

VYDÁNÍ 1955

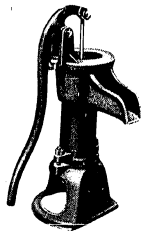
Předkládáme Vám katalog čerpadel, který podává hrubý přehled o výrobním programu naší čerpací techniky, která je ve stálém vývoji, jak to vyžaduje dnešní technický a hospodářský rozvoj. Katalog proto neobsahuje všechny řady a druhy čerpadel a čerpacích zařízení, nýbrž jen charakteristické nejběžnější konstrukce a provedení. Bližší rozpočty, popisy a projekty předložíme Vám podle přání a Vašich speciálních podmínek k použití.

VÝHRADNÍ VÝVOZCE:

STROJEXPORT PRAHA - ČESKOSLOVENSKO

TELEFON: PRAHA 24 50 41 - 24 53 70 - 24 53 90 - 24 54 00
TELEGRAMY: STROJEXPORT PRAHA - DÁLNOPIS: PRAHA 171

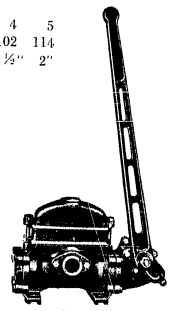
RUČNÍ ČERPADLA



Ssací a zdvižné stojanové čerpadlo ORIENT

Jednoduchých a lehkých čerpadel typu ORIENT se používá do studní hlubokých až 5 m, vrtaných, kopaných nebo ražených (s ražecím hrotem).

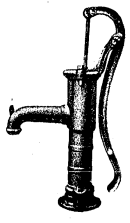
Velikost	2	3	4	5
⌀ prac. válce mm	76	89	102	114
⌀ ssací přípojky	1¼"	1¼"	1½"	2"



Ruční jednoválcové dvojčinné čerpadlo MOSTAR 90

Čerpadel MOSTAR 90 se používá v domácnostech i v zemědělství k čerpání vody ze studní až 7 m hlubokých. Pro postřik zahrad a pod. se montují tato čerpadla na jednokolý podvozek - MOSTAR Z.

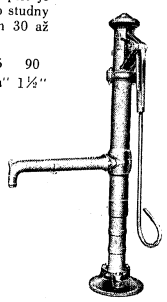
⌀ prac. válce	90 mm
⌀ ssací a tlačné přípojky	5/4"



Stojanové čerpadlo zdvižné NP-225

Tato čerpadla jsou oblíbena v domácnostech, v zahradnictví, v zemědělství a j. Ssací výška je nejvýše 7 m. Ssací píst je v tělese čerpadla. Užívá se jich pro studny kopané, vrtané i ražené, pro výkon 30 až 50 l/min.

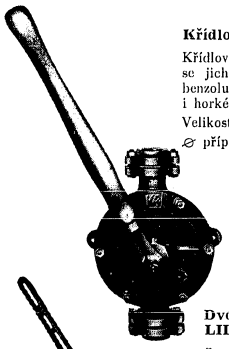
Velikost (⌀ prac. válce mm)	75	90
⌀ ssací přípojky	1¼"	1½"



Stojanové čerpadlo zdvižné STANDARD

Těchto čerpadel se používá k čerpání pitné nebo užitkové vody, ze studní kopaných nebo vrtaných, hlubokých až 30 m. Mimo těchto čerpadel se vyrábějí ještě čerpadla tlačná - DURAL a čerpadla zdvižná a tlačná - STADUR. Pracovní válec je umístěn mezi ssacím a stoupacím potrubím. Průměr ssacího potrubí je 1¼".

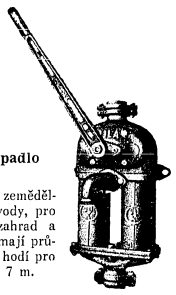
RUČNÍ ČERPADLA



Křídlová čerpadla

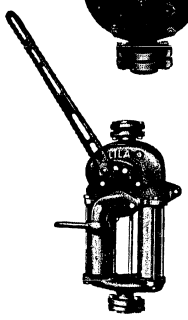
Křídlovky jsou ssací a tlačná ruční čerpadla dvojčinná. Používá se jich převážně k čerpání prchavých tekutin jako benzinu, benzolu, lihu, dále piva, vína, likérů, dehtu, olejů, studené i horké vody a pod.

Velikost	0	1	2	3	4	5	6	7	8
⌀ přípojek	½"	¾"	1"	5/4"	5/4"	6/4"	6/4"	2"	2"



Dvouválcové jednočinné čerpadlo LILA

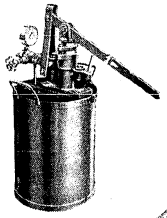
Používá se v domácnostech i v zemědělství k čerpání pitné a užitkové vody, pro domácí vodovody, pro postřik zahrad a pod. Vyměnitelné pracovní válce mají průměr 75 mm. Toto čerpadlo se též hodí pro připevnění na zeď. Ssací výška je 7 m.



Dvouválcové jednočinné čerpadlo LILA-COLONIAL

Tato čerpadla, jinak shodného provedení a možností použití jako čerpadla LILA jsou určena převážně pro exportní účely a vyrábějí se ve třech velikostech.

Velikost (⌀ prac. válce mm)	75	90	100
⌀ přípojek	1¼"	1½"	2"

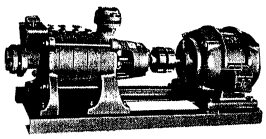


Tlaková zkoušečka TP

Tlakové zkoušečky TP se používá při zkoušení potrubí, nádrží, kotlů a různých strojírenských výrobků s hlediska jakosti a těsnosti odlitků. Tato čerpadla se dodávají s nádrží o obsahu 50 až 100 litrů nebo také bez nádrže.

Velikost	10	20	50	80	250	400	600	1000
Maximální provozní tlak atm.	10	20	50	80	250	400	600	1000

ČERPADLA PRO DOMÁCNOST



Malá článková čerpadla V-1

Používají se pro postřik zahrad a zásobování domácností vodou. Jsou podstatnou součástí samočinných domácích vodáren. Hodí se též pro použití v průmyslu k čerpání vody do 80° C.

Q 80—120 l/min.

H 7,5—40 m

⌀ přípojek 1½"

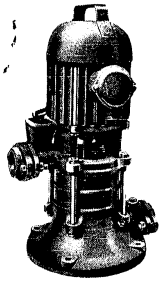
Článková odstředivá vertikální čerpadla SIGVERTA

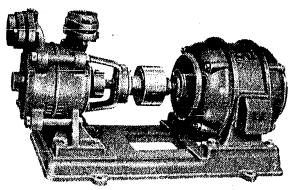
Jsou to přenosná čerpadla s třífázovým elektromotorem 0,75 kW. Používají se pro domácí vodovody, postřik zahrad a pod. Motor je chráněný proti stříkající vodě. Hodí se pro čerpání vody až 60° C teplé.

Q 60—90 l/min.

H 21—30 m

⌀ přípojek 1¼"





Samonassávací vodokružná čerpadla AL

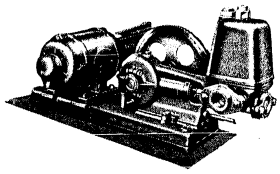
Používají se k dopravě čisté vody a jiných kapalin bez obsahu písku, pro samočinné domácí vodárny, pro postřik zahrad a pod. Pracují spolehlivě bez ssacího koše i při netěsném potrubí. Ssací schopnost je až 8 m. Ve zvláštním provedení se hodí pro čerpání prchavých látek a horké vody až 90° C.

Q 30—120 l/min.

H 13—97 m

⌀ přípojek 1¼"—1½"

ČERPADLA PRO DOMÁCNOST



Pístové čerpadlo MOSTARINA

Je to čerpadlo osvědčené konstrukce a používá se jej k čerpání čisté vody do teploty max. 80° C, pro samočinné domácí vodárny a pod. Vyrábí se pro tlaky 3, 5 a 15 atm. Čerpadla pro tlak 15 atm. se používá též jako malé kotelní napáječky.

Q 21—24 l/min.

H 35—50 m

⌀ přípojek 1"

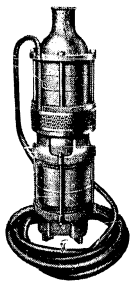
Ponorné čerpadlo NAUTILA JUBILA

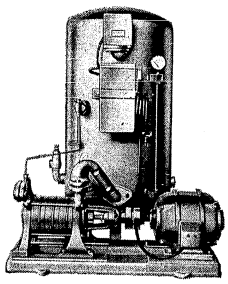
Používá se pro hluboké studny nebo vrty, kde nelze použít normálních horizontálních čerpadel, k čerpání pitné nebo užitkové vody čisté, bez tvrdých mechanických přimíšenin a pro samočinné domácí vodárny. Čerpadlo je spojeno s ponorným elektromot. o výkonu 1,1 kW, 2800 ot./min. Další typy ponorných čerpadel na str. 17.

Q 60—100 l/min.

H 24—40 m

⌀ přípojky 1¼"

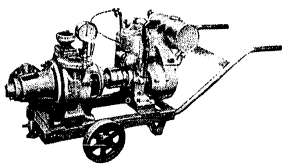




Samočinné domácí vodárny DARLING

Používají se všude, kde není k disposici veřejný vodovod. Zaručují spolehlivé zásobování vodou nejen v domácnostech, ale i v hospodářství, nemocnicích, hotelích a všude, kde je k disposici elektrický proud. V provozu jsou naprosto spolehlivé a nevyžadují žádné obsluhy. Vyrábějí se ve standardních provedeních s tlakovou nádrží o obsahu 150 až 500 litrů. Větší vodárny pro vesnice, města a továrny na dotaz.

ČERPADLA PRO ZEMĚDĚLSTVÍ



Závlahový agregát IRIJI-6

Je upraven na dvoukolém podvozku. Horizontální odstředivé čerpadlo typu HL-4 je přímo spojené s benzinovým motorem JIKOV 6 k, 2300 ot./min.

Q 270 l/min.

H 50 m

⌀ přípojek 2½"

Závlahový agregát IRIPA-5

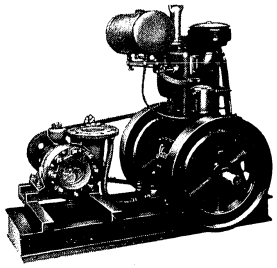
Je upraven na čtyřkolém podvozku nebo na svařovaných saních. Má odstředivé čerpadlo NG-3a nebo NG-3, poháněné klínovými řemeny od dieselmotoru Slavia 5 k, 900 ot./min.

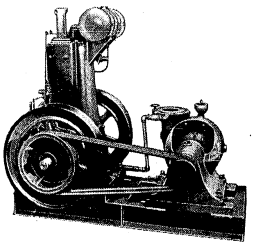
Čerpadlo NG-3a:

Q 600—1000 l/min.
H 16—13 m

Čerpadlo NG-3:

Q 1000—2000 l/min.
H 10—6 m
⌀ přípojek 4"





Závlahový agregát IRIPA-8

Je upraven na čtyřkolém podvozku nebo na svařovaných saních. Má odstředivé čerpadlo NG-4a nebo NG-4, poháněné klínovými řemeny od dieselmotoru Slavia 8 k, 800 ot./min.

Čerpadlo NG-4a:

Q 1000—2000 l/min.
H 16—10 m
⌀ přípojek: 4"

Čerpadlo NG-4:

Q 1500—3000 l/min.
H 10—7 m
⌀ přípojek: 5"

ČERPADLA PRO ZEMĚDĚLSTVÍ

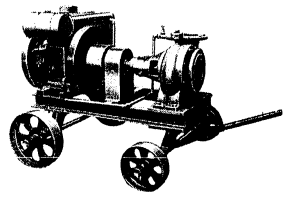
Závlahový agregát IRILO-7

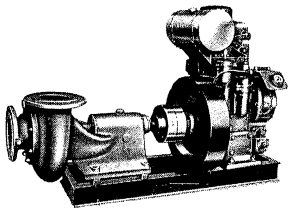
Je upraven na čtyřkolém podvozku. Odstředivé čerpadlo DELTA-5a je přímo spojeno s horizontálním dieselmotorem Slavia 7 k, 1300 ot./min.

Q 1300—2100 l/min.

H 13—8 m

⌀ přípojek: 5"





Závlahový agregát IRIPA-9

Je upraven na čtyřkolém podvozku nebo na svařovaném rámu. Odstředivé čerpadlo NG-4 je přímo spojeno s dieselmotorem Slavia 9 k, 1500 ot./min.

Q 1500—3000 l/min.

H 12—9 m

⌀ přípojek: 5"

Závlahový agregát IRIPA-12

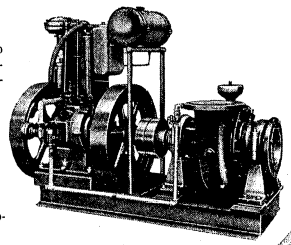
Je upraven na čtyřkolém podvozku nebo na svařovaném rámu. Samonassávací čerpadlo IRI-NZ-8 je přímo spojeno s dieselmotorem Slavia 12 k, 700 ot./min.

Q 2500—4500 l/min.

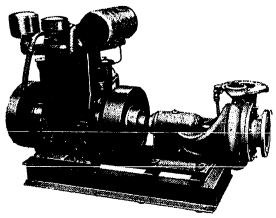
H 8—6 m

⌀ přípojek: 8"

Agregáty IRIPA-12 dodáváme též pro pohon klínovými řemeny.



ČERPADLA PRO ZEMĚDĚLSTVÍ



Závlahový agregát IRIPA-15

Je upraven na čtyřkolém podvozku nebo na svařovaném rámu. Má odstředivé čerpadlo ND-5a, poháněné klínovými řemeny dieselmotorem Slavia 15 k, 650 ot./min.

Q 2000—5000 l/min.

H 12—9 m

⌀ přípojek: 8"

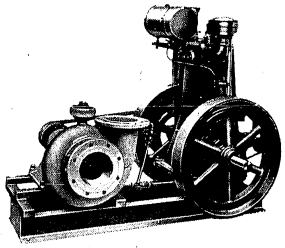
Závlahový agregát IRIPA-27

Je upraven na čtyřkolém podvozku nebo na svařovaném rámu. Odstředivé čerpadlo je přímo spojeno s dieselmotorem Slavia 27 k, 1500 ot./min.

Q 8000—10.000 l/min.

H 7—6 m

⌀ přípojek: 10"



ČERPADLA PRO ZEMĚDĚLSTVÍ

Závlahový agregát IRISKO

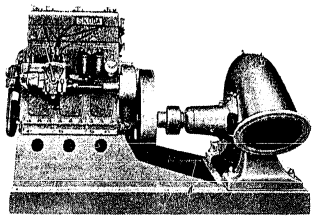
Má odstředivé čerpadlo DE-200 nebo ND-5a přímo spojené s dieselmotorem Škoda 15 k, resp. 30 k, 1500 ot./min.

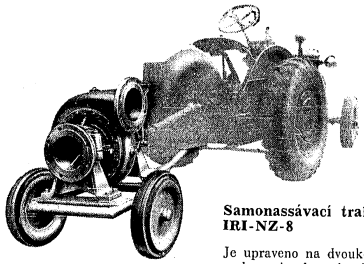
IRISKO-15:

Q 4000—6000 l/min.
H 10—7 m

IRISKO-30:

Q 3000—6500 l/min.
H 19—12 m
⌀ přípojek: 8"





Samonassávací traktorové čerpadlo IRI-NZ-8

Je upraveno na dvoukolém závěsném podvozku s kardanovým hřídelem pro pohon od traktoru, 12—30 k. Je to universální agregát pro závlahové účely, odvodňovací a stavební práce.

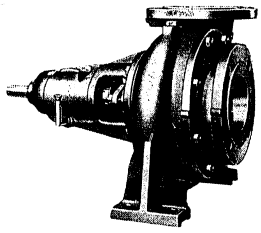
Q 2000—8000 l/min.

H 20—7 m

⌀ přípojek: 8"

Poznámka: K závlahovým agregátům dodáváme též úplné ssací a tlačné příslušenství. Závlahové agregáty, vyobrazené v tomto katalogu, jsou standardní seriově vyráběné typy. Podle přání nabídneme další agregáty pro jiné pracovní poměry.

CENTRIFUGÁLNÍ ČERPADLA NA VODU



Lehká odstředivá čerpadla DELTA

Tato čerpadla jsou jednoduché konstrukce, avšak v provozu velmi hospodárná. Čerpadla DELTA jsou určena hlavně pro zavlažovací účely.

Q 150—5000 l/min.

H 5—40 m

⌀ přípojek: 40—150 mm

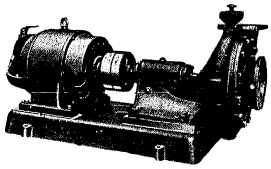
Spirálová odstředivá čerpadla N

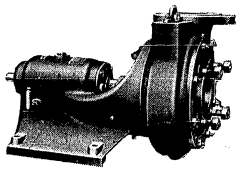
Spirálních odstředivých čerpadel N se používá k dopravě čisté vody až do teploty 80° C. Jejich jednoduchá konstrukce však umožňuje dopravovat i vodu znečištěnou. Široký rozsah typů umožňuje správnou volbu čerpadla potřebného výkonu pro nejrůznější druhy použití.

Q 50—12.000 l/min.

H 5—45 m

⌀ přípojek: 40—250 mm





Kalová odstředivá čerpadla NZ

Těchto čerpadel se používá hlavně k dopravě kalů, fekálií a odpadních vod až do teploty 80° C. Velmi dobře se osvědčují při odčerpávání vody na stavbách, jelikož se nenucpávají přimíšeným pískem a bahnem, dále v papírnách a v dolech při čerpání důlní vody.

Q 100—2500 l/min.

H 5—30 m

⌀ přípojek: 50—125 mm

PRO VŠEOBECNÉ POUŽITÍ

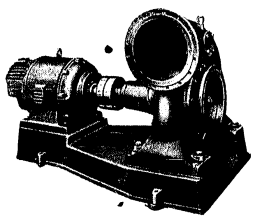
Diagonální odstředivá čerpadla DE

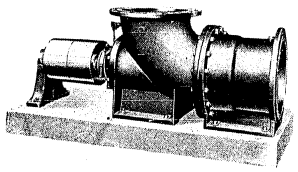
Tato čerpadla jsou stavěna pro dopravování velkých množství vody při poměrně malých dopravních výškách. Používá se jich pro dopravu čisté a kalné vody do teploty 80° C, pro závlahu přeronem, k odčerpávání při vodních stavbách, k vyčerpávání vodních nádrží a pod. účelům.

Q 2000—30.000 l/min.

H 2—15 m

⌀ přípojek: 200—450 mm





Horizontální vrtulová čerpadla S

Používá se jich zejména v zemědělství, pro závlahu přeronem, dále v průmyslu (papírenském, cukrovarnickém atd.), k účelům odvodňovacím, přečerpávacím a jiným, kde se dopravuje velké množství vody (i nečisté) při malých dopravních výškách.

Q 3000—15.000 l/min.

H 1—6 m

⌀ přípojek: 200—300 mm

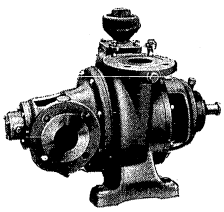
Dvoustupňová odstředivá čerpadla H

Jsou to masivní středotlaká čerpadla na dopravu čisté a mírně znečištěné vody. Široký rozsah typů umožňuje správnou volbu čerpadla potřebného výkonu pro nejrůznější druhy použití.

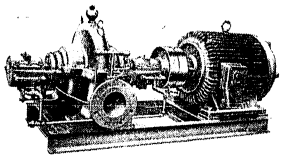
Q 150—3500 l/min.

H 5—100 m

⌀ přípojek: 50—150 mm



CENTRIFUGÁLNÍ ČERPADLA NA VODU



Spirálová odstředivá čerpadla Q

Čerpadla Q jsou spirálová horizontálně dělená čerpadla, určená k dopravě čisté nebo zakalené vody bez hrubých příměsenin. Symetrické oběžné kolo s oboustranným vtokem vody, přesně opracované a staticky vyvážené, jakož i masivní konstrukce celého čerpadla, je zárukou jeho klidného chodu a bezpečného provozu.

Q 3000—40.000 l/min.

H 30—120 m

⌀ přípojek: 150—500 mm

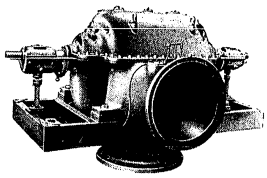
Spirálová odstředivá čerpadla K

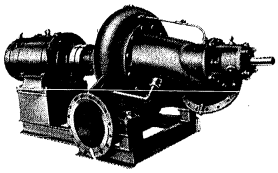
Tato čerpadla jsou masivní konstrukce a vyhovují dobře i nejtěžším pracovním podmínkám v průmyslu. Používají se mimo jiné jako chladicí čerpadla k parním turbinám, vodárenská čerpadla a pod.

Q 6000—70.000 l/min.

H 20—30 m

⌀ přípojek: 200—800 mm





Šroubová čerpadla D

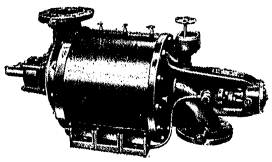
Čerpadla řady D jsou konstruována pro obtížné provozní poměry v průmyslu i zemědělství. Dopravují velká množství vody při poměrně malých dopravních výškách. Od velikosti D-400 jsou tato čerpadla horizontálně dělená.

Q 6000—300.000 l/min.

H 3—20 m

⌀ přípojek: 250—1200 mm

PRO VŠEOBECNÉ POUŽITÍ



Lehká článková odstředivá čerpadla LV

Těchto čerpadel se používá v průmyslu pro dopravu vody až 80° C teplé. Čerpadla řady LV vyrábíme též ve vertikálním provedení.

Q 300—2400 l/min.

H do 330 m

⌀ přípojek; 80—125 mm

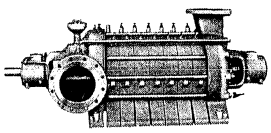
Článková odstředivá čerpadla V, provedení DA

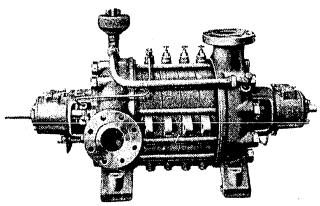
Čerpadla řady V, provedení DA. jsou určena k dopravě čisté nebo zakalené vody s nepatrným obsahem písku, uhelného prachu nebo tvrdých mechanických příměsenin do max. teploty 80° C. Pracují spolehlivě i při nejtěžších podmínkách ve vodárenském a průmyslovém provozu a v hornictví.

Q 200—7000 l/min.

H 40—250 m

⌀ přípojek: 80—250 mm





Článková odstředivá čerpadla V, provedení HD

Tato čerpadla jsou určena pro čerpání čisté vody o max. teplotě 80° C. Konstrukčně jsou řešena s hydraulickým vyrovnávacím kotoučem, který vyrovnává axiální sílu rotoru působící ve směru ssání.

Q 125—7000 l/min.

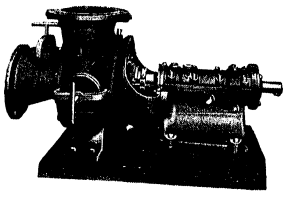
H 100—450 m

⌀ přípojek: 50—250 mm

STROJEXPORT

ČERPADLA PRO HUSTÉ KAPALINY

Těžká kalová odstředivá čerpadla OZ

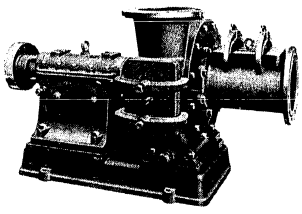


Čerpadla OZ jsou konstruována k dopravě mechanicky i chemicky znečištěných kapalin s obsahem tuhých přimíšenin. Používají se v cukrovarnickém průmyslu k dopravě řízků s vodou, saturačních kalů a odpadních vod, v papírnách k dopravě celulosy a papíroviny, v průmyslu stavebním a j. Největšího typu se používá k dopravě brambor, plavených ve vodě.

Q 1000—15.000 l/min.
H 10—50 m
⌀ přípojek: 100—300 mm

Spirální odstředivá čerpadla PAN

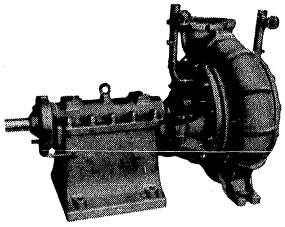
Čerpadla PAN jsou speciální konstrukce pro dopravu odpadních tekutin s obsahem mechanických přimíšenin jako popela, písku, zemin a pod. Vnitřní části čerpadla jsou z materiálu vysoké tvrdosti a odolnosti, který zaručuje maximální, prakticky dosažitelnou životnost čerpadla.



Q 300—2500 l/min.

H 5—30 m

⌀ přípojek: 65—100 mm

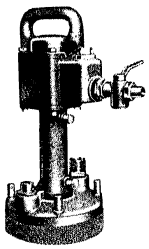


Bagrovací odstředivá čerpadla PAB

Tato čerpadla jsou určena pro těžbu a dopravu pevných látek jemně i hrubě zrněných mokrým způsobem, t. j. plavených ve vodě, k dopravě škváry, strusky, popela, štěrku, písku a jiných látek jako hlíny, jílu a pod. Používají se také v teplárenském a elektrárenském průmyslu, v úpravnách rud, pro těžbu sklářských a slévárenských písků atd.

Q 1000—12.000 l/min.
H 5—60 m
⌀ přípojek: 125—250 mm

DŮLNÍ ČERPADLA



Těžká článková odstředivá čerpadla BV

Čerpadla BV jsou masivní čerpadla, určená pro těžký provoz v dolech. Mohou čerpat čistou nebo znečištěnou vodu o max. teplotě 50° C. Používají se ponejvíce jako čerpadla hlavní v kamenouhelných nebo rudných dolech, na stavbách vodních děl, ve vodárenství a j., ve speciální úpravě pak pro torkretování.

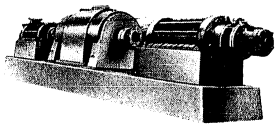
Q 800—6000 l/min.

H 200—800 m

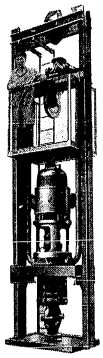
⌀ přípojek čerpadla: 125—250 mm

Přenosná důlní čerpadla RUBINA

Čerpadla RUBINA se používají v dolech pro odvodňovací předsunuté práce a k odčerpávání vody z remisí.



Q 50—250 l/min.
H 6—50 m
⌀ přípojek: 40 mm



Vertikální hloubicí čerpadla VR a VP

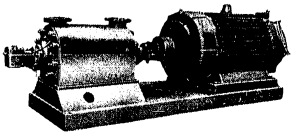
Těchto agregátů se používá k odvodňování zatopených dolů a šachet a k jejich hloubení. Vyrábějí se ve dvou konstrukčních provedeních, jednak pro spouštění na lanech, jednak zamontované do ocelových rámů pro spouštění do šachet místo těžních klecí.

Q 80—4500 l/min.

H 8—240 m

⌀ přípojek: 50—200 mm

KOTELNÍ NAPAJEČKY



Odstředivé napaječky kotlů H-V

Tato čerpadla jsou řešena jako článková odstředivá čerpadla horizontálního uspořádání. Jsou určeny především pro napájení parních kotlů upravovanou napájecí vodou do teploty až 120° C bez mechanických přimíšenin, dále k přečerpávání kondensátů v kotelním hospodářství a j.

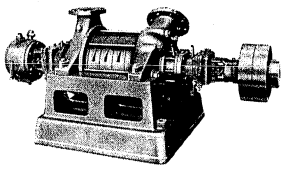
Q 18—400 m³/hod.

H max. 60 at.

⌀ přípojek: 60—250 mm

Horkovodní oběhová čerpadla TT-V

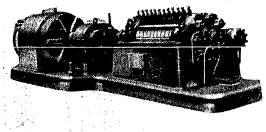
Čerpadla TT-V jsou řešena pro trvalý provoz pod vysokým statickým tlakem, odpovídajícím teplotě vody do 300° C. Uplatňují se úspěšně jako oběhová čerpadla v topném systému, v olejářském průmyslu jako procesní čerpadla a j. Jejich dokonalá konstrukce zaručuje spolehlivý provoz.



Q 150—1500 l/min.

H 160 m

⌀ přípojek: 50—125 mm



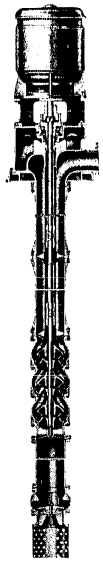
Odstředivé napaječky kotlů CCn a CCv

Napájecí čerpadla CCn a CCv vyhovují svou masivní konstrukcí pro tlaky až 200 atp. a teploty až do 220° C. Vyznačují se spolehlivostí v provozu a dlouhou životností v parních centrálách a elektrárnách.

Typ CCn: Q 35—400 m³/hod.
H 100 at.
⌀ přípojek: 80—200 mm

Typ CCv: Q 38—600 m³/hod.
H 200 at.
⌀ přípojek: 100—250 mm

ČERPADLA PRO HLUBOKÉ STUDNY A VRTY



Vertikální článková čerpadla

Jsou určena do hlubokých a úzkých vrtů o průměru 150—420 mm, do hloubky až 100 m a výkon až 10.000 l/min. Široký rozsah konstrukcí vertikálních čerpadel do vrtů umožňuje správnou volbu vhodného typu pro jakékoliv provozní poměry.

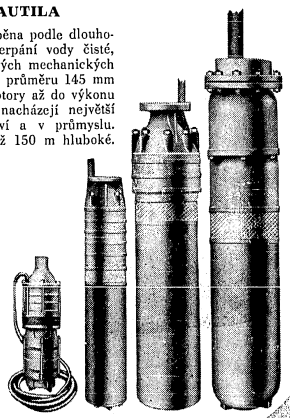
Q 60—6000 l/min.

H 8—120 m

⌀ přípojek: 50—250 mm

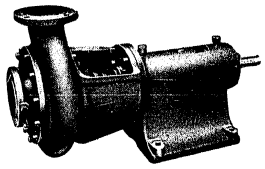
Ponorná čerpadla NAUTILA

Tato čerpadla jsou vyráběna podle dlouholetých zkušeností pro čerpání vody čisté, event. užitkové, bez tvrdých mechanických přimíšenin a pro vrty od průměru 145 mm se speciálními elektromotory až do výkonu 60 k. Podle velikosti nacházejí největší uplatnění v hospodářství a v průmyslu. Jsou vhodné pro vrty až 150 m hluboké.



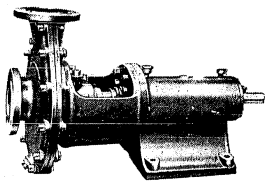
STROJEXPORT

CHEMICKÁ ČERPADLA



Chemické čerpadlo BL-6a

Speciální chemická čerpadla řady CH jsou určena pro čerpání kyselin, louhů a jiných aktivních kapalin. Dokonalá konstrukce těchto čerpadel a bohatý výběr umožňují použití těchto čerpadel pro čerpání nejrůznějších tekutin v chemickém průmyslu. Životnost a spolehlivost čerpadel je zaručena použitím takového materiálu, který odpovídá druhu čerpané tekutiny. Podle toho vyrábějí se tato čerpadla z litiny, ocelolitiny, hliníku, olova, bronzu, ferrosilitu, s vnitřními částmi vyloženými gumou, z kameniny a j.

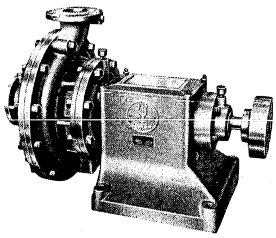


Chemické čerpadlo CH-GUM

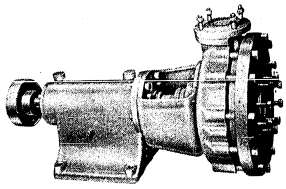
Q 50—4000 l/min.

H 3—75 m

⌀ přípojek: 40—150 mm



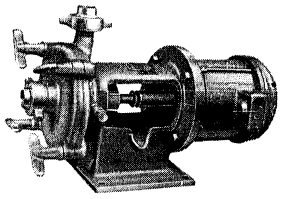
Chemické čerpadlo CH-LEG



Chemické čerpadlo CH-KER

SPECIÁLNÍ ČERPADLA A VÝVĚVY

Odstředivá čerpadla na mléko E-M



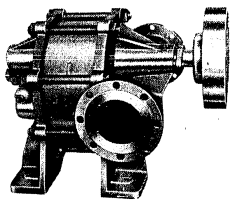
Jsou konstruována pro čerpání mléka a jiných kapalin, které vznikají při jeho zpracování v mlékárenském průmyslu. Vyhovují pro čerpání kapalin do teploty až 80° C bez tvrdých mechanických přimíšenin. Čerpadla se mohou snadno otevřít a vyčistit.

Q 20—300 l/min.

H 3,5—28 m

⌀ přípojek: 25—50 mm

Pro potravinářský průmysl, cukrovary, konservárny, pivovary, lihovary, tukové závody a j. se vyrábějí další řady speciálních čerpadel vhodných konstrukcí.



Rotační objemová čerpadla ZUN

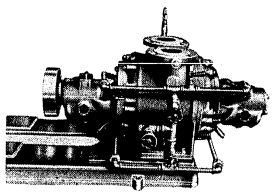
Jsou to nízkotlaká čerpadla, určená pro dopravu viskosních kapalin jako olejů, dehtu, tuků a pod. Speciální konstrukce zaručuje vysokou hospodárnost v provozu. Pro výrobu umělých vláken se vyrábějí přesná spřádací čerpadla.

Q 5—1700 l/min.

H max. 16 at.

⌀ přípojek: 20—150 mm

Rotační vodokružné vyvěvy RLP

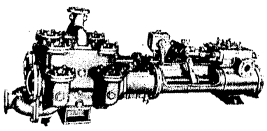


Používají se pro odssávání vzduchu, vodních par chemicky neaktivních, mechanicky čistých a částečně znečištěných při provozním vakuu až 0,1 ata. Pro chemicky aktivní plyny se vyrábějí tato čerpadla ze vhodného materiálu.

Nassáté množství zředěného vzduchu: 3 až 27 m³/min.

Provozní vakuum: až 0,1 ata.

PÍSTOVÁ ČERPADLA



Pístová čerpadla KDD

Duplexní parní pístová čerpadla KDD se vyrábějí v různých velikostech. Používají se zejména tam, kde z bezpečnostních důvodů nelze použíti jiných čerpacích zařízení s elektropohonem nebo výbušným motorem, nebo kde se má hospodárně využíti stlačeného vzduchu.

Q 55—540 l/min.

H 8—10 atp

⌀ přípojek: 50—125 mm

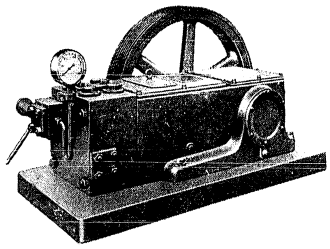
Vysokotlaká plunžrová čerpadla HTP

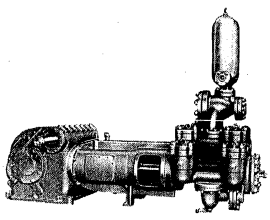
Jsou konstruována pro těžký průmyslový provoz. V běžném provedení mohou dopravovat každou neaktivní kapalinu. Používá se jich zejména pro hydraulické lisy v průmyslu plastických hmot, v lisovnách kovů pro tlakové zkoušecí stanice a pod.

Q 2,6—160 l/min.

H 70—920 atp

⌀ přípojek: 10—65 mm





Ležatá výplachová čerpadla LPV

Jsou určena pro čerpání čisté i mechanicky znečištěné vody, pro dopravu surové nafty a petroleje, dále pro doly, průmysl a j. do max. teploty 80° C. Používá se jich zejména k dopravě výplachu při provádění naftových vrtů.

Q 140—2200 l/min.

Tlak 26—120 atp

⌀ přípojek: 50—200 mm

UPOZORŇUJEME!

Prosíme, abyste při svém dotazu uvedli nejdůležitější technická data, která jsou nezbytná k správnému vypracování nabídky. Čím podrobnější údaje nám poskytnete, tím vhodnější a hospodárnější čerpadlo Vám nabídneme. Sdělte nám proto:

1. **Jaký druh čerpadla požadujete?**

   Popište k jakému účelu je čerpadlo určeno, přejete-li si určitý typ nebo zda volbu vhodného čerpadla ponecháváte na nás.

2. **Vlastnosti čerpané tekutiny.**

   Zajímá nás, zda se čerpá studená nebo horká voda, čistá nebo špinavá, resp. kaly, zda voda obsahuje písek nebo jiné pevné části; popište aktivní kapaliny, jejich koncentraci, měrnou váhu a teplotu.

3. **Dopravované množství.**

   Uveďte v lit./min. nebo Im. GPM a pod. nebo průměr přípojek v palcích. Při volbě vodárny uveďte, jaké objekty, kolik osob a kusů dobytka bude zásobováno.

4. **Manometrickou dopravní výšku.**

   Uveďte v m, ve stopách a pod. Pokud ji sami nemůžete určit, udejte délku ssacího a výtlačného potrubí, počet oblouků a armatur, výšku od spodní hladiny ve studni, nejvyšší výtok, průměr stávajícího, resp. požadovaného potrubí. Rovněž nás zajímá, jaký průměr má studna a kolik vody je ve studni v létě.

5. **Druh poháněcího stroje.**

   Informujte nás, jaký elektrický proud máte k disposici — druh a provozní napětí, počet period, zda si přejete ruční nebo automatické spouštění nebo zda má býti pohon spalovacím motorem. Uveďte, zda požadujete stabilní, převozný nebo přenosný agregát.

6. **Jaké příslušenství k čerpadlu požadujete?**

   Ssací koš, ssavice, roury, šoupátka, zpáteční klapku, oblouky, počty jednotlivých kusů a délku rour, elektrickou výzbroj, náhradní součásti a pod.

Pokud máte nějaké zvláštní přání, popište je ve svém dotazu, resp. u složitých případů připojte rozměrový náčrtek situace s příslušnými mírami. Pro speciální druhy čerpadel Vám zašleme podrobný dotazník.

Pracujeme neustále na zdokonalování našich výrobků a konstruujeme další nová čerpadla ve speciálním provedení pro nejrůznější obory průmyslu.

Naši technici stále zlepšují naše výrobky a proto vyobrazení a technické hodnoty mohou býti pozměněny. Závazné nabídky a podrobné prospekty jednotlivých čerpadel a čerpacích agregátů Vám na požádání předložíme.

Přehled výrobního programu československé čerpací techniky.

ČERPADLA PRO DOMÁCNOST, ZEMĚDĚLSTVÍ A PRŮMYSL

Ruční pístová čerpadla:
Stojanová, malá pístová, křídlovky, tlakové zkoušečky, membránová ruční čerpadla, stáčecí čerpadla na benzin, močůvková čerpadla.

Malá motorická čerpadla:
Samonassávací horizontální a vertikální čerpadla, odstředivá čerpadla pro domácí potřebu, pístová čerpadla, čerpadla na močůvku.

Samočinné domácí vodárny DARLING:
Úplné vodárny pro obytné domy, farmy, zemědělství, hotely, nemocnice a činžovní domy s čerpadly odstředivými, samonassávacími, pístovými, ponornými a hloubkovými.

Velké vodárny a čerpací stanice kanalisační:
Úplné stanice pro průmyslové závody, vesnice a města s odstředivými, vertikálními, ponornými a hloubkovými čerpadly. Úplné soupravy pro kanalisační vody.

Závlahové soupravy a keřdovací zařízení:
Stabilní, převozné a přenosné agregáty se spalovacími motory a elektromotory, s odstředivými diagonálními vrtulovými, šroubovými a samonassávacími čerpadly, pro závlahu přeronem a postřikem.

ČERPADLA PRO PRŮMYSLOVÉ ÚČELY

Chemie:
Odstředivá a vrtulová čerpadla na kapaliny chemicky aktivní, provedené z litiny, ocelolitiny, z legovaných ocelí, z olova, pogumované, z ferosilitu, z kameniny, hliníku. Bezucpávková a samonassávací čerpadla.

Potravinářství:
Čerpadla na cukerné šťávy, mléko, smetanu, víno, pivo, líh, záparu, pulpu, atd. Odstředivá samonassávací čerpadla, pístová, objemová a membránová čerpadla pro dopravu škrobu, vody s bramborami a cukrovkou.

Doly a hutě:
Důlní těžká a lehká čerpadla, spouštěcí a hloubicí čerpadla, torkretovací a bagrovací čerpadla, odstředivá a pístová čerpadla na cementové a uhelné kaly, pospílek a písek.

Olejářství:
Čerpadla na horké oleje do 360° C, krakovací čerpadla, stojatá a ležatá výplachová čerpadla, čerpadla na dopravu nafty (dálková).

Strojírenství:
Čerpadla pro hydraulické pohony a tlakovací čerpadla, dávkovací čerpadla, chladicí čerpadla pro obráběcí stroje, chladičky parních turbin, čerpadla pro hydroblast a lodní čerpadla.

Energetika:
Akumulační čerpadla největších typů, vertikální i horizontální, elektro a turbonaječky do teploty 200° C, oběhová horkovodní čerpadla a kondensátky.

Papírenství:
Čerpadla pro dopravu papíroviny, míchací čerpadla, odssávací vývěvy, čerpadla na chlorovou a odpadní vodu.

Textilní průmysl:
Zubová spřádací čerpadla na umělá vlákna, míchací čerpadla pro barvírny, čerpadla na aktivní a odpadní vody.

Mimo těchto hlavních druhů čerpadel dodáváme čerpadla od nejmenších ručních i průmyslových druhů až po největší průmyslová čerpadla do tlaku až 2.000 atp a výkonů až 1,000.000 litrů za minutu. Provádíme stavby a vybavení kompletních vodáren a čerpacích stanic s agregáty o příkonu až 50.000 kW. Naše projekční technická oddělení jsou Vám vždy k disposici.

STROJEXPORT PRAHA - ČESKOSLOVENSKO

R 10.329 - SMT 01 6821

V MĚSÍCI ZÁŘÍ

předvádí Československo své výrobky ještě na těchto mezinárodních veletrzích nebo výstavách:

v Australii	— Melbourne	25. 8.—10. 9.
v Indonesii	— Djakarta	12. 8.—18. 9.
v Pakistanu	— Karachi	2. 9.— 2. 10.
ve Švédsku	— Stockholm	27. 8.—11. 9.
v Německu	— Lipsko	4. 9.— 9. 9.
v Rakousku	— Vídeň	11. 9.—18. 9.
v Belgii	— Gent	10. 9.—25. 9.
v Jugoslavii	— Záhřeb	2. 9.—13. 9.
v Řecku	— Soluň	4. 9.—25. 9.
v Bulharsku	— Plovdiv	4. 9.—20. 9.
v Turecku	— Izmir	20. 8.—20. 9.

В СЕНТЯБРЕ МЕСЯЦЕ

Чехословакия демонстрирует свои изделия также на следующих международных выставках и ярмарках:

в Австралии	Мельбурн	25. 8-10. 9
в Индонезии	Джакарта	12. 8-18. 9
в Пакистане	Карачи	2. 9- 2. 10
в Швеции	Стокгольм	27. 8-11. 9
в Германии	Лейпциг	4. 9- 9. 9
в Австрии	Вена	11. 9-18. 8
в Бельгии	Гент	10. 9-25. 9
в Югославии	Загреб	2. 9-13. 9
в Греции	Салоники	4. 9-25. 9
в Болгарии	Пловдив	4. 9-20. 9
в Турции	Измир	20. 8-20. 9

Czechoslovak products are exhibited at the following International Trade Fairs or Exhibitions during

SEPTEMBER

In Australia	— Melbourne	25. 8.—10. 9.
In Indonesia	— Djakarta	12. 8.—18. 9.
In Pakistan	— Karachi	2. 9.— 2. 10.
In Sweden	— Stockholm	27. 8.—11. 9.
In Germany	— Leipzig	4. 9.— 9. 9
In Austria	— Vienna	11. 9.—18. 9.
In Belgium	— Ghent	10. 9.—25. 9.
In Yugoslavia	— Zagreb	2. 9.—13. 9.
In Greece	— Salonika	4. 9.—25. 9.
In Bulgaria	— Plovdiv	4. 9.—20. 9.
In Turkey	— Izmir	20. 8. 20. 9.

EN SEPTEMBRE

les produits tchécoslovaques seront en outre exposés aux foires et expositions internationales suivantes:

en Australie	Melbourne	25. 8.—10. 9.
en Indonésie	Djakarta	12. 8.—18. 9.
au Pakistan	Karachi	2. 9.— 2. 10.
en Suède	Stockholm	27. 8.—11. 9.
en Yougoslavie	Zagreb	2. 9.—13. 9.
en Allemagne	Leipzig	4. 9.— 9. 9.
en Bulgarie	Plovdiv	4. 9.—20. 9.
en Turquie	Izmir	20. 8.—20. 9.
en Autriche	Vienne	11. 9.—18. 9
en Grèce	Salonique	4. 9.—25. 9.
en Belgique	Gand	10. 9.—25. 9.

IM MONAT SEPTEMBER

werden tschechoslowakische Erzeugnisse noch auf nachstehenden internationalen Messen und Ausstellungen vorgeführt

in Australien	Melbourne	25. 8.—10. 8.
in Indonesien	Djakarta	12. 8.—18. 9.
in Pakistan	Karachi	2. 9.— 2. 10.
in Schweden	Stockholm	27. 8.—11. 9.
in Deutschland	Leipzig	4. 9.— 9. 9.
in Österreich	Wien	11. 9.—18. 9.
in Belgien	Gent	10. 9.—25. 9.
in Jugoslawien	Zagreb	2. 9.—13. 9.
in Griechenland	Saloniki	4. 9.—25. 9.
in Bulgarien	Plovdiv	4. 9.—20. 9.
in der Türkei	Izmir	20. 8.—20. 9.

Vystavují podniky pro zahraniční obchod:

STROJEXPORT
vývoz strojů a strojního zařízení
Praha II, Václavské nám. 56

TECHNOEXPORT
vývoz průmyslových celků
Praha II, Václavské nám. 56

KOVO
dovoz a vývoz výrobků přesného strojírenství
Praha VII, tř. Dukelských hrdinů 47

MOTOKOV
vývoz a dovoz vozidel a výrobků lehkého kovoprůmyslu
Praha VII, tř. Dukelských hrdinů 47

PRAGOEXPORT
vývoz a dovoz výstrojního a drobného spotřebního zboží
Praha II, Jungmannova 34.

В выставке чехословацкого машиностроения в гор. Брно принимают участие следующие чехословацкие внешнеторговые объединения:

СТРОЙЭКСПОРТ
чехословацкое объединение по экспорту машин и машинного оборудования
Прага II, Вацлавске нам. 56

ТЕХНОЭКСПОРТ
чехословацкое объединение по экспорту комплектного оборудования заводов
Прага II, Вацлавске нам. 56

КОВО
чехословацкое объединение по импорту и экспорту изделий точного машиностроения
Прага VII, Дукельских грдину 47

МОТОКОВ
чехословацкое объединение по импорту и экспорту машин дорожного транспорта и изделий легкой металлопромышленности
Прага VII, Дукельских грдину 47

ПРАГОЭКСПОРТ
чехословацкое объединение по экспорту и импорту мелких товаров широкого потребления
Прага II, Юнгманова 34

The following foreign trade corporations are participating in the Exhibition in Brno:

STROJEXPORT
for Export of Machines and Machinery Equipment
Praha 2, Václavské nám. 56

TECHNOEXPORT
for Export of Complete Industrial Plants
Praha 2, Václavské nám. 56

KOVO
for Import and Export of Precision Engineering Products
Praha 7, Tř. Dukelských hrdinů 47

MOTOKOV
for Import and Export of Vehicles and Light Engineering Products
Praha 7, Tř. Dukelských hrdinů 47

PRAGOEXPORT
for Export and Import of Smallware and Outfitting Articles,
Praha 2, Jungmannova 34

A l'exposition de Brno sont représentées les entreprises du commerce extérieur suivantes:

STROJEXPORT
exportation de machines et d'équipements mécaniques
Praha II, Václavské n. 56

TECHNOEXPORT
exportation d'installations industrielles complètes
Praha II, Václavské nám. 56

KOVO
importation et exportation des produits de la mécanique de haute précision
Praha VII, tř. Dukelských hrdinů 47

MOTOKOV
exportation et importation de véhicules et de produits de l'industrie légère des métaux
Praha VII, tř. Dukelských hrdinů 47

PRAGOEXPORT
exportation et importation d'articles et accessoires divers pour la confection et l'équipement
Praha II, Jungmannova 34

In Brno stellen folgende Außenhandelsunternehmen aus:

STROJEXPORT
Ausfuhr von Maschinen und Maschineneinrichtungen
Praha II, Václavské nám. 56.

TECHNOEXPORT
Ausfuhr kompletter Industrieanlagen
Praha II, Václavské nám. 56.

KOVO
Ein- und Ausfuhr von Erzeugnissen des Präzisionsmaschinenbaues
Praha VII, tř. Dukelských hrdinů 47

MOTOKOV
Ein- und Ausfuhr von Fahrzeugen und Erzeugnissen der leichten Metallindustrie
Praha VII, tř. Dukelských hrdinů 47

PRAGOEXPORT
Ein- und Ausfuhr von Ausstattungs- und Kleingebrauchswaren
Praha II, Jungmannova 34.

PRÁCE 01 - 14201

BRNO 11. IX. - 9. X. 1955

PLÁN VÝSTAVY ČESKOSLOVENSKÉHO STROJÍRENSTVÍ

ПЛАН ВЫСТАВКИ ЧЕХОСЛОВАЦКОГО МАШИНОСТРОЕНИЯ

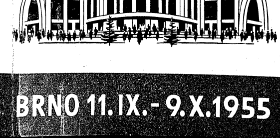
[redacted]

PLAN OF THE CZECHOSLOVAK ENGINEERING EXHIBITION

[redacted]

PLAN DE L'EXPOSITION DE MACHINES TCHÉCOSLOVAQUES

PLAN DER TSCHECHOSLOWAKISCHEN MASCHINENBAUAUSSTELLUNG



BRNO 11. IX. - 9. X. 1955

Současně s brněnskou strojírenskou výstavou
probíhá v Praze
VÝSTAVA ČS. SKLA, BIŽUTERIE, KERAMIKY
Výhodné letecké spojení během dne!

Одновременно с машиностроительной выставкой в Брно
в Праге открыта
ВЫСТАВКА ЧЕХОСЛОВАЦКОГО СТЕКЛА, ЮВЕЛИРНЫХ БЕЗДЕЛУШЕК И КЕРАМИКИ
Город Брно связан с Прагой очень удобным авиационным сообщением!

50X1-HUM

AN EXHIBITION OF BOHEMIAN GLASS, IMITATION JEWELLERY AND CERAMICS
is being held in Prague
at the same time as the Engineering Industry in Brno.
Advantageous air connection during the day!

50X1-HUM

Simultanément avec l Exposition de Machines Tchécoslovaques de Brno
se tient à Prague
L'EXPOSITION TCHÉCOSLOVAQUE DU VERRE, DE LA BIJOUTERIE ET DE LA CÉRAMIQUE
Communication avantageuse par avion en un jour!

Gleichzeitig mit der Tschechoslowakischen Maschinenbauausstellung in Brno
verläuft in Prag
DIE TSCHECHOSLOWAKISCHE GLAS-, BIJOUTERIE- UND KERAMIK-AUSSTELLUNG
Vorteilhafte Flugzeugverbindung während eines Tages!

NĚKTERÉ NOVINKY A POZORUHODNOSTI VÝSTAVY:

prostor č.

1 ● Dynamometr KS 112-6 s příslušenstvím
3 ● Elektroerosivní obrábění kovů
5 ● Kovoobráběcí stroje ŠKODA, TOS, MAS
7 ● Rotační pec TYNAROP s náhonem
12 ● Tryskový stav
13 ● Nejmenší roentgen světa — MINIDENT
15 ● Nový typ osobního vozu ŠKODA 440 — SPARTAK

НЕКОТОРЫЕ НОВИНКИ И ОСОБЕННО ИНТЕРЕСНЫЕ ЭКСПОНАТЫ ВЫСТАВКИ:

Пространство №

1 ● Динамометр KS 112-6 с принадлежностями
3 ● Электроэрозионная обработка металлов
5 ● Металлообрабатывающие станки ШКОДА, TOS, MAS
7 ● Вращающаяся печь TYNAROP с приводом
12 ● Бесселночный тканый станок
13 ● Самый маленький рентгеновский аппарат в мире - МИНИДЕНТ
15 ● Новая модель легкового автомобиля ШКОДА 440

SOME NOVELTIES AND SPECIAL FEATURES OF THE EXHIBITION:

Exhibition space No.

1 ● KS 112 - 6 Dynamometer with accessories
3 ● Electroerosive machining of metals
5 ● ŠKODA, TOS, MAS Machine Tools
7 ● TYNAROP Rotary Furnace with drive
12 ● Jet Looms
13 ● MINIDENT — the World's smallest X Ray Unit
15 ● ŠKODA 440 new model of passenger car

QUELQUES NOUVEAUTÉS ET ATTRACTIONS DE L'EXPOSITION:

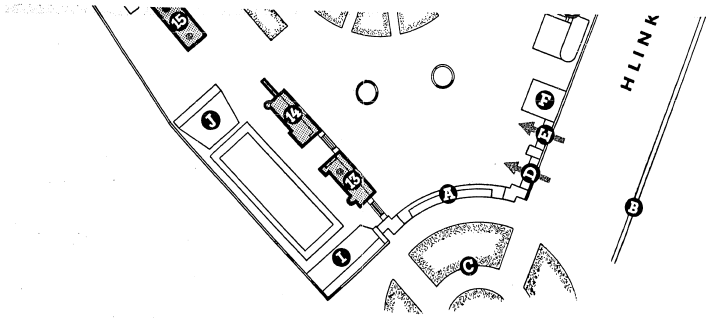
Salle no.

1 ● Dynamomètre KS 112 - 6 avec accessoires
3 ● Usinage électro-érosif des métaux
5 ● Machines outils à métaux ŠKODA, TOS, MAS
7 ● Four rotatif TYNAROP avec commande
12 ● Métier à tuyère
13 ● Le plus petit appareil radiologique du monde MINIDENT
15 ● Nouveau modèle de voiture de tourisme ŠKODA 440

EINIGE NEUHEITEN UND SEHENSWÜRDIGKEITEN DER AUSSTELLUNG:

Saal Nr.

1 ● Dynamometer KS 112 - 6 mit Zubehör
3 ● Elektroerosive Metallbearbeitung
5 ● Werkzeugmaschinen ŠKODA, TOS, MAS
7 ● TYNAROP Rotationsofen mit Antrieb
12 ● Düsenwebstuhl
13 ● MINIDENT — der kleinste Röntgenapparat der Welt
15 ● Neue Type eines Personenwagens — ŠKODA 440



1 *Ochoz průmyslového paláce*
Elektromotory
Transformátory
Svářecí stroje
Kalicí stroje
Elektromagnetické zkoušečky
● Dynamometr KS 112-6 s příslušenstvím MEZ

2 *Rotunda*
Vstupní hala průmyslového paláce

3 *Zadní ochoz rotundy*
Metalisovna
Hasicí přístroje
Kovoobráběcí stroje a nářadí
● Elektroerosivní obrábění kovů

4 ● *Balkon rotundy*
Kanceláře vystavujících firem a Čs. obchodní komory

5 ● *Hala kovoobráběcích strojů*

6 *Hala dřevoobráběcích strojů*

7 *Střední hala průmyslového paláce*
Dieselmotory a dieselagregáty
Lokomobila GRAMA
Parní turbiny
Zařízení parních elektráren
Tažní stroje
Válcovna
● Rotační pec s náhonem „TYNAROP"

8 *Křídlo střední haly*
Těžká elektrotechnika

9 *Boční hala průmyslového paláce*
Vodní turbiny
Turbogenerátor
Zařízení chemických továren
Modely turbin, vodních přehrad a mostů

10 *Spojovací chodba*
Průtokové měřiče a čerpadla HEFA

11 *Plynárenský pavilon*
Parní a vodní armatury
Soupátka a rozvody

12 *Střední dvorana*
Textilní stroje
● Tryskový stav
Textilní měřicí přístroje
Grafické stroje
Kancelářské stroje — rýsovací nástroje
Tabákové stroje
Krejčská a kuchyňská zařízení
Potravinářské stroje
Chladicí zařízení
Sítě stroje
Zbraně

13 *Pavilon Brno*
Zařízení lékařských ordinací
● Nejmenší roentgen světa — MINIDENT

14 *Pavilon Morava*
Foto — kino — optika
Laboratorní a měřicí přístroje

15 *Pavilon motorových vozidel*
Motocykly, auta, letadla
Letištní zařízení
Pneumatiky, kola
Ražby
Servis
● Nejrychlejší dvoutakty světa JAWA/ČZ
Novinka — automobil ŠKODA 440 — SPARTAK

A Ředitelství výstavy
Lidová restaurace
Buffet

B Příchod od stanice el. dráhy (Ulice HLINKY, tramvaje č. 1 a 6)
C Náměstí u výstaviště
D Vchod pro domácí návštěvníky
E Vchod pro cizí návštěvníky
F Směnárna
Pošta
Recepční místnosti
G Cizinecká restaurace
H Divadlo — biograf
I Restaurace se zahradou
K Vinárna
L Prodej různého zboží v drobném
M Dětská železnice
N Volná prostranství
Venkovní rozvodny
Transformační stanice
Transformátory
Polymerisátor
Z Železniční kolej
Lokomotivy, vagony, tramvaje atd.

a) Portálový jeřáb
b) Universální stříhavý model sítě
c) Venkovní rozvodna 100 kV
d) Stavební stroje — čerpadla
e) Traktory — hospodářské stroje

Výstavu organisuje:
ČESKOSLOVENSKÁ OBCHODNÍ KOMORA
Praha I, ulice 28. října 13.

L'exposition est organisée par:
LA CHAMBRE DE COMMERCE DE TCHÉCOSLOVAQUIE
Praha I, ulice 28. října 13

Организатор выставки:
ЧЕХОСЛОВАЦКАЯ ТОРГОВАЯ ПАЛАТА
Прага I, ул. 28 Октября 13

Organisation der Ausstellung:
TSCHECHOSLOWAKISCHE HANDELSKAMMER
Praha I, ulice 28. října 13.

The Exhibition is organized by
THE CZECHOSLOVAK CHAMBER OF COMMERCE
Praha 1, ulice 28. října No. 13

5 ● *Hall of Machine Tools*
6 *Hall of Woodworking Tools*
7 *Central Hall of the Industrial Palace*
Diesel Engines and Diesel Generating Sets
Steam and Water Fittings
Sluice Valves and Valve Gears
12 *Textile Machinery*
Jet Loom
Graphic Machines
● Office Machines — Drawing Sets
[illegible] strokes
A new car — ŠKODA 440
A Exhibition Management
Restaurant
Buffet
[illegible] trams etc.
a) Gantry Crane
b) Statistical Machines
c) Outside switch room 100 kV
d) Building Machines — Pumps
e) Tractors — Agricultural Machines

1 *Galerie du palais de l'industrie*
Moteurs électriques
Transformateurs
Machines à souder
Machines à tremper
Eprouveuses électromagnétiques
● Dynamomètre KS 112-6 avec accessoires MEZ

2 *Rotonde*
Hall d'entrée du palais de l'industrie

3 *Galerie postérieure de la rotonde*
Atelier de métallisation
Extincteurs d'incendie
Machines-outils à métaux et outils
● Usinage électro-érosif des métaux

4 ● *Balcon de la rotonde*
Bureaux des maisons exposantes et de la Chambre de Commerce de Tchécoslovaquie

5 ● *Hall des machines-outils à métaux*

6 *Hall des machines pour travailler le bois*

7 *Hall central du palais de l'industrie*
Moteurs et groupes Diesel
Locomobile GRAMA
Turbines à vapeur
Installations de centrales hydrauliques
Machines d'extraction
Laminoir
● Four rotatif „TYNAROP" à commande

8 *Aile du hall central*
Industrie électrotechnique lourde

9 *Hall latéral du palais de l'industrie*
Turbines hydrauliques
Turbogénérateur
Equipements d'usines chimiques
Modèles de turbines, de barrages et de ponts

10 *Passage*
Débimètres et pompes HEFA

11 *Pavillon des usines à gaz*
Armatures hydrauliques et à vapeur, vannes et distributeurs

12 *Salle centrale*
Machines pour l'industrie textile
● Métier à tuyère
Appareils de mesure pour l'industrie textile
Machines graphiques
Machines de bureau — appareils à dessiner
Machines pour l'industrie du tabac
Equipements de magasins et de cuisine
Machines pour l'industrie des produits alimentaires
Installations frigorifiques
Machines à coudre
Armes

13 *Pavillon Brno*
Equipements pour médecins
● Le plus petit appareil radiologique du monde — MINIDENT

14 *Pavillon Morava*
Appareils photographiques et cinématographiques — lunetterie
Appareils de mesure et de laboratoire

15 *Pavillon des voitures automobiles et motocyclettes*
Motocyclettes, autos, avions
Equipements pour aérodromes
Pneus, roues
Chaînes
Service
● Les deux-temps les plus rapides du monde JAWA/ČZ
Nouveauté — la voiture ŠKODA 440

A Direction de l'exposition
Restaurant
Buffet

B Accès de l'arrêt du tram (Rue HLINKY, tram No. 1 et 6)
C Place de l'Exposition
D Entrée pour visiteurs tchécoslovaques
E Entrée pour visiteurs étrangers
F Bureau de change
Bureau de poste
Salles de réception
G Restaurant pour étrangers
H Théâtre — Cinéma
I Jardin-restaurant
K Débit de vins
L Vente détaillée de différentes marchandises
M Chemin de fer pour enfants
N Espace libre
Stations extérieures de distribution
Station de transformation
Transformateurs
Polymérisateur
Z Rails du chemin de fer
Locomotives, wagons, tramways etc.

a) Grue à portique
b) Machine mathématique pour traitement de données statistiques
c) Station extérieure de distribution 100 kV
d) Machines de bâtiment — pompes
e) Tracteurs — machines agricoles

1 *Galerie des Industriepalais*
Elektromotoren
Transformatoren
Schweißmaschinen
Härtemaschinen
Elektromagnetische Prüfmaschinen
● Dynamometer KS 112-6 mit Zubehör MEZ

2 *Rotunde*
Eingangshalle des Industriepalais

3 *Rückwärtige Galerie der Rotunde*
Metallisierungswerkstatt
Löschgeräte
Metallbearbeitende Werkzeugmaschinen und Werkzeuge
● Elektroerosive Metallbearbeitung

4 *Balkon der Rotunde*
Büros der ausstellenden Firmen und der Tschechoslowakischen Handelskammer

5 ● *Halle der metallbearbeitenden Werkzeugmaschinen*

6 *Halle der Holzbearbeitungsmaschinen*

7 *Mittlere Halle des Industriepalais*
Dieselmotoren und -aggregate
Lokomobile GRAMA
Dampfturbinen
Einrichtungen von Dampfkraftwerken
Fördermaschinen
Walzwerk
● TYNAROP-Rotationsofen m. Antrieb

8 *Flügel der mittleren Halle*
Schwere Elektrotechnik

9 *Seitenhalle des Industriepalais*
Wasserturbinen
Turbogenerator
Einrichtungen von chemischen Fabriken
Modelle von Turbinen, Wasserkraftwerken und Brücken

10 *Verbindungsgang*
Durchflußmesser und Pumpen HEFA

11 *Gaswerk-Pavillon*
Dampf- und Wasserarmaturen
Schieber und Verteilungsanlagen

12 *Mittlere Aula*
Textilmaschinen
● Düsenwebstuhl
Meßgeräte für die Textilindustrie
Graphische Maschinen
Büromaschinen-Zeichenmaschinen
Tabakmaschinen
Laden- und Kücheneinrichtungen
Maschinen für die Nahrungsmittelindustrie
Kühlanlagen
Nähmaschinen
Waffen

13 *Pavillon Brno*
Einrichtungen für Ärztesprechzimmer
● MINIDENT — der kleinste Röntgenapparat der Welt

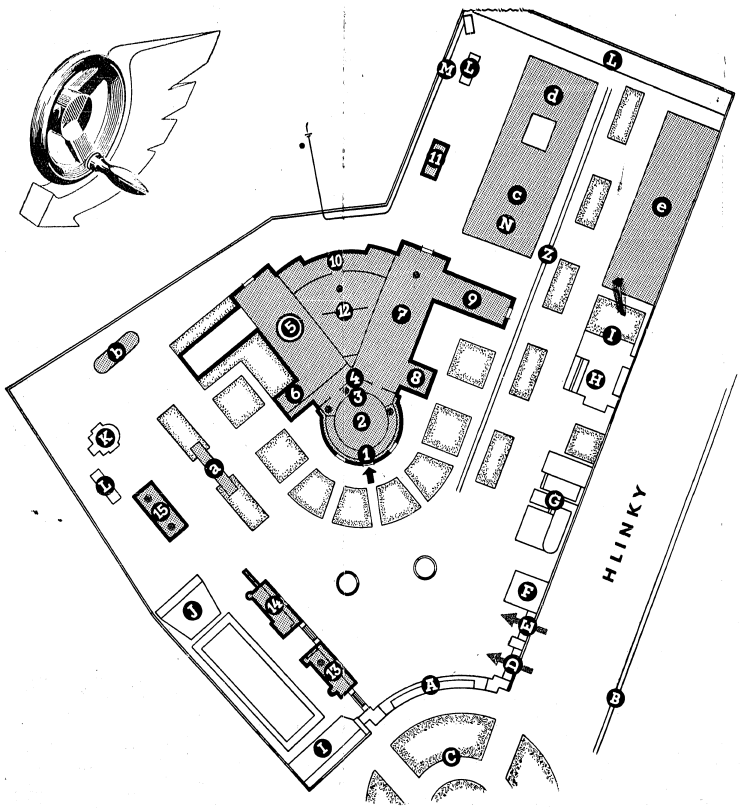
14 *Pavillon Morava*
Photo — Kino — Optik
Laboratoriums- und Meßgeräte

15 *Pavillon der Kraftfahrzeuge*
Motorräder, Kraftwagen, Flugzeuge
Flughafeneinrichtungen
Reifen, Räder
Triebkästen
Service
● Die schnellsten Zweitakter der Welt JAWA/ČZ
Neuheit — Kraftwagen ŠKODA 440

A Ausstellungsdirektion
Restaurant
Buffet
B Zugang von der Straßenbahnstation (HLINKY-Straße, Straßenbahn Nr. 1 und 6)

C Ausstellungsplatz
D Eingang für tschechoslowakische Besucher
E Eingang für ausländische Besucher
F Wechselstube
Postamt
Empfangsräume
Fremdenrestaurant
G Theater — Kino
H Garten-Restaurant
I Weinstube
K Einzelverkauf verschiedener Waren
L Kindereisenbahn
M Freifläche
N Außenschaltanlagen
Transformatorstationen
Transformatoren
Polymerisator
Eisenbahngleise
Z Lokomotiven, Eisenbahnwagen, Straßenbahnwagen usw.

a) Portalkran
b) Mathematische Maschine zur statistischen Datenverarbeitung
c) Außenschaltanlage von 100 kV
d) Baumaschinen — Pumpen
e) Schlepper — landwirtschaftliche Maschinen



1 *Ochoz průmyslového paldce*
Elektromotory
Transformátory
Svářecí stroje
Kalicí stroje
Elektromagnetické zkoušečky
● Dynamometr KS 112-6 s příslušenstvím MEZ

2 *Rotunda*
Vstupní hala průmyslového paláce

3 *Zadní ochoz rotundy*
Metalisovna
Hlavní přístroje
Kovoobráběcí stroje a nářadí
● Elektroerosivní obrábění kovů

4 ● *Balkon rotundy*
Kanceláře vystavujících firem a Čs. obchodní komory

5 ● *Hala kovoobrděcích strojů*

6 *Hala dřevoobrděcích strojů*

7 *Střední hala průmyslového paldce*
Dieselmotory a dieselagregáty

Lokomobila GRAMA
Parní turbiny
Zařízení parních elektráren
Chladicí zařízení
Válcovna
● Rotační pec s náhonem „TYNARO"
8 *Křídla střední haly*
Těžká elektrotechnika
9 *Boční hala průmyslového paldce*
Vodní turbiny
Turbogenerátor
Zařízení chemických továren
Modely turbin, vodních přehrad a mostů
10 *Spojovací chodba*
Průtokové měřiče a čerpadla HEFA
11 *Plynárenský pavilon*
Parní a vodní armatury
Soupátka a rozvody
12 *Střední dvorana*
Textilní stroje
● Tryskový stav
Textilní měřicí přístroje
Grafické stroje
Kancelářské stroje — rýsovací nástroje

Tabákové stroje
Krámská a kuchyňská zařízení
Potravinářské stroje
Chladicí zařízení
Šicí stroje
Zbraně
13 *Pavilon Brno*
Zařízení lékařských ordinací
● Nejmenší roentgen světa — MINIDENT
14 *Pavilon Morava*
Foto — kino — optika
Laboratorní a měřicí přístroje
15 *Pavilon motorových vozidel*
Motocykly, auta, letadla
Letištní zařízení
Pneumatiky, kola
Ložiska
Servis
● Nejrychlejší dvoutakty světa JAWA/ČZ
Novinka — automobil ŠKODA 440 — SPARTAK

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Lidová restaurace
Buffet

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Pošta
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I Restaurace se zahrádou
K Vinárna
L Prodej různého zboží v drobném
M Dětská železnice
N Volné prostranství
Venkovní rozvodny
Transformační stanice
Transformátory
Polymeristor
Z Železniční kolej
Lokomotivy, vagony, tramvaje atd.

a) Portálový jeřáb
b) Universální stříbavý model sítě
c) Venkovní rozvodna 100 kV
d) Stavební stroje — čerpadla
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Организатор выставки:
ЧЕХОСЛОВАЦКАЯ ТОРГОВАЯ ПАЛАТА
Прага I, ул. 28 Октября 13

Organisation der Ausstellung:
TSCHECHOSLOWAKISCHE HANDELSKAMMER
Praha I, ulice 28. října 13.

The Exhibition is organized by
THE CZECHOSLOVAK CHAMBER OF COMMERCE
Praha 1, ulice 28. října No. 13

1 *Галерея Дворца Промышленности*
Электродвигатели
Трансформаторы
Сварочные аппараты
Штамповые машины
Приборы для электромагнитных испытаний
● Динамометр KS 112-6 с принадлежностями MEZ

2 *Ротонда*
Вестибюль Дворца промышленности

3 *Задняя галерея ротонды*
Цех металлизации
Прецизионное оборудование
Металлообрабатывающие станки и инструмент
● Электроэрозионная обработка металлов

4 ● *Балкон ротонды*
Конторы организаций, принимавших участие в выставке, и павильоны Чехословацкой Торговой палаты

5 ● *Зал металлообрабатывающих станков*

6 *Зал деревообрабатывающих станков*

7 *Центральный зал Дворца промышленности*
Двигатели Дизеля и дизель-агрегаты
Локомобиль ГРАМА

Паровые турбины
Оборудование паровых электростанций
Насосные машины
Прокатный цех
● Вращающаяся печь с приводом TYNAROP
8 *Крыло центрального зала*
Техника электротехники
9 *Боковой зал Дворца промышленности*
Гидротурбины
Турбогенератор
Оборудование для химических заводов
Модели турбин, плотин и мостов
10 *Светлый коридор*
Расходомеры и насосы марки ХЕФА
11 *Павильон газовой техники*
Паровая и водяная арматура
Задвижки и распределители
12 *Главный зал*
Текстильные машины
● Десятицветный ткацкий станок
Измерительные приборы для текстильной промышленности
Графические машины
Канцелярские машины, чертежные принадлежности
Пишущие машины
Оборудование для кухонь и магазинов

Машины для пищевой промышленности
Холодильные установки
Швейные машины
Оружие
13 *Павильон Брно*
Оборудование врачебных кабинетов
● Самый маленький рентгеновский аппарат в мире — МИНИДЕНТ
14 *Павильон Моравы*
Фото- и кинотехника
Лабораторные и измерительные приборы
15 *Павильон транспорта*
Мотоциклы, автомобили, самолеты
Оборудование аэродромов
Шины, колеса
Цепи
Мелкие детали
● Наиболее скоростные двухтактные мотоциклы мира ЯВА/ЧЗ
Новинка — автомобиль ШКОДА 440

A Дирекция выставки
Столовая
Буфет
B Вход с остановки трамваев № 1 и № 6

C Площадь перед входом на выставку
D Вход для местных посетителей
E Вход для иностранных гостей
F Пункт обмена валют
Почтовое отделение
Помещение для приемов
G Ресторан для иностранных гостей
H Театр, кинотеатр
I Ресторан с садом
K Винный ресторан
L Различные продажи разных товаров
M Детская железная дорога
N Открытое пространство
Передвижные распределительные трансформаторные подстанции
Трансформаторы
Полимеризатор
Железнодорожные пути
Локомотивы, вагоны, трамвайные вагоны и т. д.

a) Портальный кран
b) Универсальная передвижная модель сети (математическая машина для обработки данных энергосетей)
c) Передвижное распределительное устройство 100 кв
d) Строительные механизмы, насосы
e) Тракторы, сельскохозяйственные орудия

1 *Gallery of the Industrial Palace*
Electromotors
Transformers
Welding Machines
Tempering Machines
Electromagnetic Testing Apparatus
● KS 112 Dynamometer with MEZ accessories

2 *Rotunda*
The Entrance Hall of the Industrial Palace

3 *Rear gallery of the Rotunda*
Metal Presses Equipment
Fire Fighting Apparatus
Machine Tools and Tools
● Electroerosive Machining of Metals

4 ● *Balcony of the Rotunda*
Offices of the Firms exhibiting and of the Czechoslovak Chamber of Commerce

5 ● *Hall of Machine Tools*

6 *Hall of Woodworking Tools*

7 *Central Hall of the Industrial Palace*
Diesel Engines and Diesel Generating Sets

GRAMA Steam Engine
Steam Turbines
Steam Power Plant Equipment
Hoisting Machines
Rolling Mill
● „TYNAROP" Rotary Furnace with Drive
8 *Wing of the Central Hall*
Heavy Electrical Engineering
9 *Side Hall of the Industrial Palace*
Water Turbines
Turbogenerator
Equipment for Chemical Works
Scale Models of Turbines, Dams and Bridges
10 *Connecting Corridor*
HEFA Pumps and Flow Meters
11 *Gas Works Pavilion*
Steam and Water Fittings
Sluice Valves and Valve Gears
12 *Textile Machinery*
Jet Loom
Graphic Machines
● Office Machines — Drawing Sets

Tobacco Machines
Shop and Kitchen Equipment
Machines for the Food Industry
Refrigerating Equipment
Sewing Machines
Arms
13 *Brno Pavilion*
Surgery Equipment
● MINIDENT — the World's smallest X Ray Unit
14 *Moravia Pavilion*
Photo- Ciné- Optical Equipment
Laboratory and Measuring Instruments
15 *Pavilion of Motor vehicles*
Motor-cycles, Motor-cars, Aircraft
Airport Equipment
Tyres, Wheels
Chains
Service
● JAWA/ČZ the World's fastest Two strokes
A new car — ŠKODA 440

A Exhibition Management
Restaurant
Buffet

B Entrance from tram stop (HLINKY Street, Tram No. 1 and 6)
C Exhibition Square
D Entrance for local visitors
E Entrance for visitors from abroad
F Exchange Office
Post Office
Reception Rooms
G Restaurant for visitors from abroad
H Theatre — Cinema
I Garden Restaurant
K Wine Restaurant
L Retail Sale of sundry goods
M Children's Railway
N Open space
Outside switch rooms
Transformer station
Transformers
Polymerisator
Z Railway track
Locomotives, wagons and carriages, trams etc.

a) Gantry Crane
b) Statistical Machines
c) Outside switch room 100 kV
d) Building Machines — Pumps
e) Tractors — Agricultural Machines

1 *Galerie du palais de l'industrie*
Moteurs électriques
Transformateurs
Machines à souder
Machines à tremper
Eprouveuses électromagnétiques
● Dynamomètre KS 112-6 avec accessoires MEZ

2 *Rotonde*
Hall d'entrée du palais de l'industrie

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Atelier de métallisation
Excitateurs d'incendie
Machines-outils à métaux et outils
● Usinage électro-érosif des métaux

4 ● *Balcon de la rotonde*
Bureaux des maisons exposantes et de la Chambre de Commerce de Tchécoslovaquie

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Moteurs et groupes Diesel
Locomobile GRAMA

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Installations de centrales hydrauliques
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● Métier à tuyère
Appareils de mesure pour l'industrie textile
Machines graphiques
Machines de bureau — appareils à dessiner

Machines pour l'industrie du tabac
Equipements de magasins et de cuisine
Machines pour l'industrie des produits alimentaires
Installations frigorifiques
Machines à coudre
Armes
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Equipements pour aérodromes
Pneus, roues
Chaînes
Service
● Les deux-temps les plus rapides du monde JAWA/ČZ
Nouveauté — la voiture ŠKODA 440

A Direction de l'exposition
Restaurant
Buffet

B Accès de l'arrêt du tram (Rue HLINKY, tram No. 1 et 6)
C Place de l'Exposition
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E Entrée pour visiteurs étrangers
F Bureau de change
Bureau de poste
Salles de réception
G Restaurant pour étrangers
H Théâtre — Cinéma
I Jardin-restaurant
K Débit de vins
L Vente détaillée de différences marchandises
M Chemin de fer pour enfants
N Espace libre
Stations extérieures de distribution
Station de transformation
Transformateurs
Polymériseur
Z Rails de chemin de fer
Locomotives, wagons, tramways etc.

a) Grue à portique
b) Machine mathématique pour traitement de données statistiques
c) Station extérieure de distribution 100 kV
d) Machines de bâtiment — pompes
e) Tracteurs — machines agricoles

1 *Galerie des Industriepalais*
Elektromotoren
Transformatoren
Schweißmaschinen
Härtemaschinen
Elektromagnetische Prüfmaschinen
● Dynamometer KS 112-6 mit Zubehör MEZ

2 *Rotunde*
Eingangshalle des Industriepalais

3 *Rückwärtige Galerie der Rotunde*
Metallisierungswerkstatt
Löschgeräte
Metallbearbeitende Werkzeugmaschinen und Werkzeuge
● Elektroerosive Metallbearbeitung

4 *Balkon der Rotunde*
Büros der ausstellenden Firmen und der Tschechoslowakischen Handelskammer

5 ● *Halle der metallbearbeitenden Werkzeugmaschinen*

6 *Halle der Holzbearbeitungsmaschinen*

7 *Mittlere Halle des Industriepalais*
Dieselmotoren und -aggregate
Lokomobile GRAMA

Dampfturbinen
Einrichtungen von Dampfkraftwerken
Fördermaschinen
Walzwerk
● TYNAROP-Rotationsofen m. Antrieb
8 *Flügel der mittleren Halle*
Schwere Elektrotechnik
9 *Seitenhalle des Industriepalais*
Wasserturbinen
Turbogenerator
Einrichtungen von chemischen Fabriken
Modelle von Turbinen, Wasserkraftwerken und Brücken
10 *Verbindungsgang*
Durchflußmesser und Pumpen HEFA
11 *Gaswerk-Pavillon*
Dampf- und Wasserarmaturen
Schieber und Verteilungsanlagen
12 *Mittlere Aula*
Textilmaschinen
● Düsenwebstuhl
Meßgeräte für die Textilindustrie
Graphische Maschinen
Büromaschinen-Zeichenmaschinen
Tabakmaschinen
Laden- und Kücheneinrichtungen

Maschinen für die Nahrungsmittelindustrie
Kühlanlagen
Nähmaschinen
Waffen
13 *Pavillon Brno*
Einrichtungen für Ärztesprechzimmer
● MINIDENT — der kleinste Röntgenapparat der Welt
14 *Pavillon Morava*
Photo — Kino — Optik
Laboratoriums- und Meßgeräte
15 *Pavillon der Kraftfahrzeuge*
Motorräder, Kraftwagen, Flugzeuge
Flughafeneinrichtungen
Reifen, Räder
Triebketten
Service
● Die schnellsten Zweitakter der Welt JAWA/ČZ
Neuheit — Kraftwagen ŠKODA 440

A Ausstellungsdirektion
Restaurant
Buffet
B Zugang von der Straßenbahnstation (HLINKY-Straße, Straßenbahn Nr. 1 und 6)

C Ausstellungsplatz
D Eingang für tschechoslowakische Besucher
E Eingang für ausländische Besucher
F Wechselstube
Postamt
Empfangsräume
G Fremdenrestaurant
H Theater — Kino
I Garten-Restaurant
K Weinstube
L Einzelverkauf verschiedener Waren
M Kindereisenbahn
N Freifläche
Außenschaltanlagen
Transformatorstationen
Transformatoren
Polymerisator
Z Eisenbahngleise
Lokomotiven, Eisenbahnwagen, Straßenbahnwagen usw.

a) Portalkran
b) Mathematische Maschine zur statistischen Datenverarbeitung
c) Außenschaltanlage von 100 kV
d) Baumaschinen — Pumpen
e) Schlepper — landwirtschaftliche Maschinen

CZECHOSLOVAK

otor eview

ŠKODA 440

CZECHOSLOVAK
Motor Review

STAT

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15. VII. 1955

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LEGACY OF A GOOD PAST

F. A. ELSTNER

In the tremendous effort made by the designers and makers of motor vehicles during the last as well as this century an honourable position is held by Czechoslovakia. This relatively small, yet industrially well advanced country in the heart of Europe is the cradle of revolutionary ideas which have brought pleasure, profit and sporting successes to motorists, having repeatedly anticipated the international development.

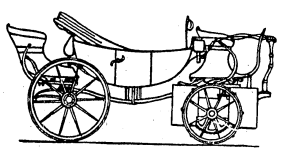
How simple were the beginnings of the large factories, the products of which were delivered to all parts of the world a few years later! There is not a single technical line in which this development can be seen so clearly as in motoring. Our attitude to a motor vehicle is never a mere relation to a cold, lifeless machine. Motor vehicles are living supplements of modern men and women, we want to know their origin, their "pedigree", their "breed".

Nowadays, the names ŠKODA and TATRA for motor vehicles and JAWA and ČZ for motor-cycles are still in existence in the Czechoslovakia of today after the development of the past. Let us follow the tracks of the past of the two largest Czechoslovak motor factories.

•

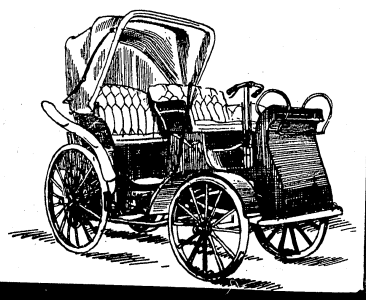
It was in a beautiful country situated at the foot of mountains, not far away from large coal mines and iron-foundries that a master wheelwright founded his on workshop in the small town of Kopřivnice in 1853. Assisted by two of his comrades he started there the manufacture of wooden carts for farmers. They soon became experts. They built sturdy stage coaches of smart appearance and, after the railways had been introduced, they began building railway carriages. They were no longer "Hunters of Shadows". By this time the development had changed from its romantic beginnings to the straight path from coach to motor car, from bicycle to motor-cycle.

In 1897, the Kopřivnice manufacturers fitted to a sturdy stage coach a Benz four stroke, water cooled flat twin engine of 2750 c. c. or 168 cu. in. swept volume. The carburettor was of the evaporation type, the field coil ignition soon being replaced with a Bosch breaker magneto. Gears were changed by inclining the steering wheel column, but the steering wheel? Bicycle handlebars had to do for the time being. The vehicle was given the proud name of President and started immediately — under its own power — a 250 km or 155 mile long strip to the Vienna exhibition, covering 17 km or 10.56 miles per hour. After that it went all over Europe to the starts of further trials and motor races. As late as in 1947 is could be seen "still going strong" amongst the exhibits of the Geneva Automobile Salon.



The great-grandfather PRESIDENT was too slow in comparison with the top designs of those days: RENAULT, MORS, PANHARD LEVASSOR or CLEMENT BAYARD. The following year therefore the Kopřivnice manufacturers produced a racing car of their own. Having a weight of 975 kg or 2154 lb, it could develop a speed exceeding 100 km or 62 miles per hour. It started successfully in the Salzburg-Linz-Vienna race, on the Frankfurt circle and in the famous Gordon-Bennet Price. In the Nice-La Turbie hill climb it gained first place and can now also be seen amongst the exhibits of the National Technical Museum in Praha.

The Kopřivnice cars of those days were fitted with engines located underneath the rear seat; they were regular "horseless coaches", sometimes arousing panic and astonishment in backward country places. Some French designers also continued their engines at the rear or under the floor, while others started building cars with vertical cylinder engines located at the front end. According to the latter conception, Kopřivnice build in the period from 1902–1905 a four cylinder car fitted with pneumatic tyres, very unlike a stage coach, extremely comfortable according to the standard of those days, well balanced and reliable. It succeeded well in various heavy trials,



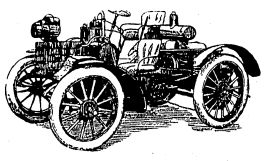
excelling in the first place due to a feature which has since become the motto of the TATRA vehicles: d u r a b i l i t y. A commercial vehicle of their production of 1902 operated continuously serving a country customer until 1926 when it became a museum exhibit.

From 1900 the then Twenty three years old designer, Ledvinka, creator of the revolutionary principles of the TATRA vehicles, started working in Kopřivnice. At the end of 1906 he built a four cylinder OHV engine of 30 HP output. He attempted to build the six cylinder OHC engine, introduced on the market in 1910. His monobloc design was a great success and in 1914 he introduced a new important feature of on the six cylinder model: front wheel brakes. Charles Faroux, the French journalist and a great expert of those days, started an international argument about the expedience of this feature.

The outbreak of World War I temporarily stopped any further development.

After that War, new, modern works were built in Kopřivnice, the first new model of which meant even the revolution in vehicle building. It was a small, people's car fitted with a tube type chassis, individually sprung and controlled wheels, swinging half axles and an air cooled, perfectly simple twin cylinder engine. The novelty stirred up quite a storm of antagonism in the expert circles! The wide circle of customers, however, won. The vehicle was inexpensive, assiduous, able to master any terrain and its modesty became proverbial. Drivers reported having covered one hundred thousand, half million and at last one million kilometres (620,000 miles). The cars were invincible and indestructible. The factory failed to meet all the demands owing to insufficient capacity.

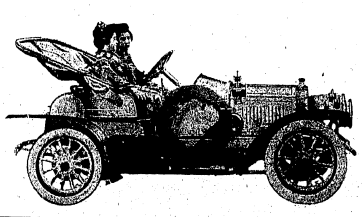
The TATRA twin cylinder models won in the famous Targa Florio in Sicily in 1925 by gaining first and second place in their category. The tiny TATRA was the first to pass the difficult cross-country and road trial on the Leningrad-Moskva-Tiflis-Moskva track in an international competition between 78 vehicles of all makes. It proved to be of such exceptional advantage in high country that the AUSTRO-TATRA license production was started in Vienna.



These experiences fully convinced the Works of the advantage of air cooled engines and they became the first in the world in this line of production. They remained true to this principle up to the twelve cylinder air cooled Diesel engines for trucks of 10 metr. tons or 22,000 lb capacity.

The TATRA twin cylinder models remained without any change of design for seven years only front wheel brakes beeing added. Some parts of this model, such as the gearbox and the rear axle, were subsequently introduced unchanged into the production of more powerful models, four cylinder engines of 1680 c. c. or 102.51 cu. in. and 1910 c. c. or 117.55 cu. in. in swept volume. Not before 1932 was a new model put on the market, people's four cylinder of 1160 c. c. or 70.78 cu. in. swept volume, later modified to 1250 c. c. or 76.275 cu. in. swept volume. It continued along the successful path and the opinion of customers was unanimous: extremely low operational costs, invincibility, trifling routine maintenance and repairs.

The development of the Czechoslovak motor car and motor cycles went hand in hand with the enterprising and adventurous spirit so typical of the motorists of this country. They longed for far away countries — motor vehicles were their substition for the sea! Perhaps no other country can boast of having undertaken so many distance trips throughout the world, beginning with the expeditions of travellers, explorers and reporters and ending with a round-the world-trip, covered in 97 days! THE TATRA twin cylinder crossed



Africa from Cairo to Cape Town as far back as in 1931, the six wheeled car of two litres swept volume crossed Australia — and — let us leave the past for the present — in 1947 the streamlined eight cylinder model was sent on a circular tour across Africa and from Argentina to Mexico. These trials must also won the World Championship in the pedigree of the present TATRA vehicles of every description, real transport robots.

Let us conclude the chapter dealing with the enthusiastic efforts which began a century ago in a small cartwright's shop and look a little westward to the Czech town of Mladá Boleslav.

In that place two enterprising men, Klement, a bookseller and cycling enthusiast, and Laurin, an engineer, met at the end of the last century. In 1896 they opened a small worshop staffed with five employees, three machine tools and 2 HP steam engine. They started repairing and making bicycles. Klement travelled to Paris. There he saw motor tricycles and bicycles. He brought home the "motor-cycle" produced by the Werner brothers, which was able to cover four and a half kilometres (2.8 miles) per hour. A petrol lamp served for ignition of the engine and, riding it was indeed martyrdom. Laurin and Klement built a machine of their own design, the first motor-cycle within the borders of the former Austria-Hungary fitted with electric spark ignition and suitable for continuous operation.

Thus they became the founders of the Czechoslovak motor-cycle production — so big nowadays — and produced an experimental four wheel voiturette as early as in 1901.

In 1906 they brought on the market a twin cylinder car fitted with a propeller shaft, definitely unlike any "horseless coach". This car already featured all the principles of the a modern car of the future. A year later, the makers started the production of four cylinder cars and in 1908 they built the first eight cylinder engine. The trade mark "Laurin & Klement" hat a world-wide reputation, acquired due to the outstanding sporting successes of their motor cycles, which also won the World Championship in the "Coupe Internationale" in France, averaging eighty kilometres (50 miles) per hour on a road circuit of 270 km (168 miles).

The works in Mladá Boleslav lived through sport. At that time the most difficult trials were run in Russia and became the battlefields of the most famous makes of motors. In 1907, the L & K four cylinder car won the Petrohrad-Moskva contest. The Laurin & Klement cars competed in and won races in France, Italy, Spain, Austria and Egypt. From 1908 to 1913 they carried off 57 first, 25 second and 11 third prizes. They established international records for their category. In the Neukirchen Alley near Vienna, Hieronymus covered a flying start kilometre with an average of 115,385 km (71,654 miles) per hour in 1908, averaging 118,720 km (73,725 miles) per hour at Brookland with the same car in the same year. The famous Hieronymus was also a pioneer of aviation, and consequently the Mladá Boleslav works produced their first aircraft motor, a water cooled OHV four cylinder in line, fitted with two magnetos and with an advantageous power output to weight ratio, as early as in 1908.

In 1911, the Knight sleeve valve engine was introduced as a four cylinder model while the six cylinder de luxe model of the same make was fitted after World War I.

In 1914, Laurin & Klement was the biggest motor factory in Austria-Hungary. They produced motor cycles, passenger cars, stationary Diesel engines, motor buses, trucks and vans, special ambulance cars and mail vans, taxi cabs, road rollers and motor ploughs which were exported to France even after the war. Between 1909 and 1910 they delivered 100 taxi cabs to Vienna alone. They helped to solve transport problems in the impassable, hilly countries of south-eastern Europe, where some of the vehicles delivered in 1914 are still in running condition even today.

The greater part of the production is exported; the vehicles from Mladá Boleslav operate in various European countries as well as in Japan and South America.

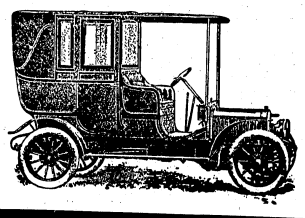
From World War I., Czechoslovakia emerged as a free country. A rapid swing manifested itself in every line of production and the starting predominance of American mass production forced European producers to look for assistance in concerns. The radiator grilles of the former Laurin & Klement vehicles started to carry the mark of ŠKODA, the name of the biggest engineering works in Czechoslovakia. The tiny workshop of 1896 was completely lost in the complex of madern workshops equipped for line production.

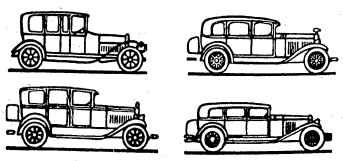
Smart — according to the standard of those days —, fast and economical four and six cylinder models started to run on the roads, displaying the typical Czechoslovak feature: d u r a b i l i t y. Vehicles of the 1921 to 1925 production can be found operating on roads even today, having covered milions of miles.

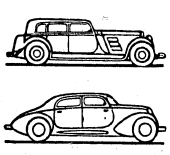
The real start of the new era, however, was the moment the Mladá Boleslav designers built a small people's car. Like the designers of the TATRA-contrary to the classical tradition, they built a tube chassis corrying like a steel backbone the individually sprung wheels. The four cylinder, water cooled engine was of exceptional operating economy.

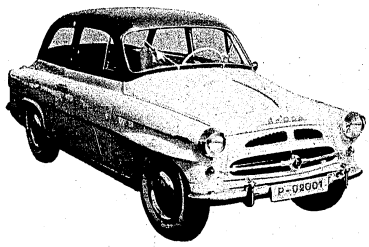
The ŠKODA POPULAR won in contests and races, starting at the Rallye Monte Carlo as well as in contests across South Africa. It ran endurance trials with high daily averages, 25,000 km (15,500 miles) on the trip New York - Mexico City - San Diego - San Francisco - New York - Cherbourg - Madrid - Praha. The ŠKODA- RAPID model of a higher power output passed as the first motor car from Ivory Beach to Madagascar and made a trip round the world in 97 days. Everything pointed to Czechoslovakia gaining triumphs in the line of light passenger cars equal to those gained in the export of motor cycles after World War II. The cars were shipped to numerous European countries, to India, Siam, South Africa, Egypt and South America, where in 1938 the new ŠKODA 1100 model undertook a trial trip through Argentine, averaging 530 km (330 miles) daily. In the same year, this car won the "Great Prize of Montevideo" in Uruguay. All these contest and trial trips brought new, priceless experience for both the design and production. Another war — the second in a single century — interupted friendly relations between the individual nations. After 1945, a large reorganisation of production took place, and new models: the ŠKODA 1100, 1101, the ŠKODA 1200, the TATRA eight cylinder and the TATRAPLAN appeared in the Automobile Salons.

The Czechoslovak designers and makers are now planning a new, economical vehicle. The ŠKODA 440 is the first result of their co-operation. It is the youngest heir of the development traced in brief historical outline in this article.





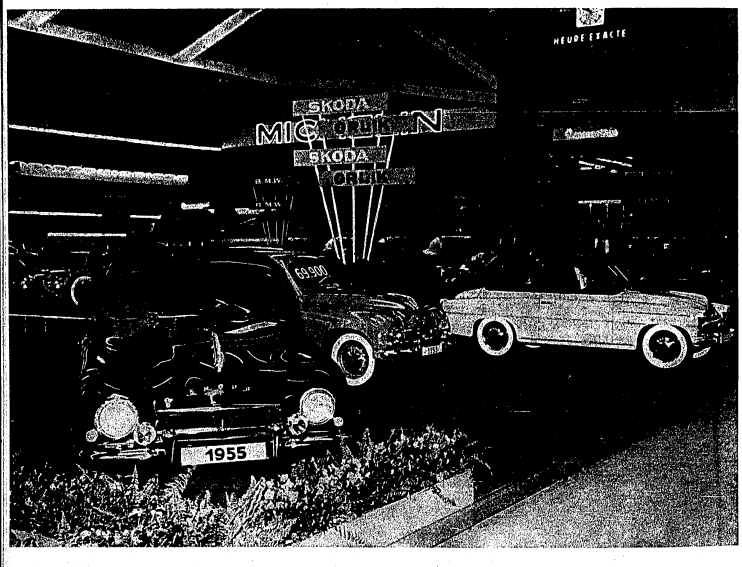




THE BRUSSELS AUTOMOBILE EXHIBITION

The Brussels Automobile Exhibition, the 38th of its kind, was opened on January 15th, 1955. For a little less than a fortnight it was the daily centre of interest of thousands of businessmen and serious buyers.

The Brussels exhibition is the first every year and therefore it receives the greatest attention. It is true that there are greater exhibitions such as the Paris one, which surpasses the Brussels exhibition with respect to the amount of stands, space, as well as the number of visitors. But at the Brussels exhibition foreign competition is much stronger than anywhere else. As a matter of fact, success at the Brussels exhibition is a prerequisite for and incentive to the further exhibition in Geneva and, at the same time, a promise of sales success in the coming season. This year 67 producers of motor cars, 56 exhibitors of motor-cycles and 147 exhibitors and sellers of car equipment met at the Brussels exhibition. Czechoslovak motor car and motor-cycle works were also among the exhibitors. It can be said that almost every make brought an improvement, whether with regard to the body, mechanical components or similar. With respect to the finish and improvements of small cars, a great number was registered.



One of the types to which the greatest attention was paid was the new model of the Czechoslovak ŠKODA motor car which so far has been exhibited under the name of ORLIK. The final designation of this type probably will be ŠKODA 440. It was the centre of interest the whole time. It was admired not only by prospective customers, but by experts and technicians of competitive firms as well.

Very favourable comments were published in various newspapers. "Les Sports" of January 25th praises not only the improvements of mechanical components, but mainly of the body, emphasizing at the same time that the finish of the exhibited car is perfect. A favourable report comes from Morocco where "Le Maroc automobile" of Jan. 28th under the heading "Revolution of ŠKODA" writes: "... the Czechoslovak design represented by the ŠKODA Works is apparent from the fact that the car cannot be recognized when compared with the old model. The new model combines the elements of an American body with the elements of European design. The basic lines are perfect, the front windscreen guarantees fine visibility and a broad view."

The newspaper "L'action automobile et touristique" and similarly also the newspaper "L'automobile" write very favourably on this new model. Great success was also gained by the ŠKODA 1200 car which achieved record sales during the exhibition and thus even surpassed some of the great competitive makes.

ŠKODA 1200
Passenger Car

ING. VLADIMÍR MATOUŠ

Czechoslovak Škoda cars — the issue of more than 50 years of technical progress as well as of a continuous evolution from good to better and to the best, have always had quite individual features. Škoda cars were always characterized by their design taking full advantage of the latest technical progress, by their extreme reliability, working economy, durability and exceptional operational properties, accompanied by smart appearance, riding comfort, excellent suspension and easy routine maintenance.

This range of the rightly popular and highly appraised motor vehicles is completed by the ŠKODA 1200 Passenger Car, produced by the Motor Works in Mladá Boleslav, a country town, the history of which goes far back to the earliest days of the ancient Czech kingdom.

Let us have a closer look at the Škoda 1200 Car. Its appearance attracts attention at first sight. Smart and aesthetically well balanced is the shape of its all-metal flush-sided body, which allows — even without any superfluous chromium-plated accessories — its noble line to be displayed, thus giving evidence that even a pronounced streamline by no means eliminates harmony of beauty and performance.

The interior of the car, a comfortable access to which is ensured by 4 doors, — 2 either side — is of suprising roominess in length and width, quite exceptional with a car of this category fitted with an engine of 1.2 litres or 73.22 cu. in. swept volume. Four to five persons can be comfortably accomodated on the well sprung cushioned seat with plenty of foot room. The undivided seats enable full advantage to be taken of the interior

width. The front seat can be adjusted — even while the vehicle is running — so as to ensure the most comfortable sitting position. The hinged backrest can be swung up, thus enabling access to the luggage compartment, while the boxes accommodating miscellaneous objects are accessible only after the seat has been swung up.

The standard equipment of the car comprises a hot water heating unit located in the centre beneath the dashboard. This unit enables circulation heating of the interior air, which can be adjusted so as to suit the respective circumstances on the one hand, and intense streaming of warmed-up air through two nozzles to the windscreen on the other hand. Owing to this arrangement, the windscreen both in front of the driver and his mate is kept clear and in perfect condition even at extremely low temperature of the ambient air.

The rear luggage boot, accessible from outside through a folding lid and illuminated by the tail number plate lamp at night, is of amazing spaciousness. The spare wheel and the necessary tool kit are stored together with the car jack quite separately in a special dirt-proof box underneath the luggage compartment. Both the lighting and the signalling set correspond to the latest international standards of headlamps, tail lamps combined with ruby reflectors and stop lamps, as well as number plate illumination. The trafficators are of the blinker type — white glass front, ruby rear, fitted with acoustic and optic tell-tale unit. The interior is lighted with a dome lamp, while the independant illumination of the dashboard instruments can be dimmed as necessary.

The all-metal body of welded shell design with integral mudguards and valances is sprayed with a noise- and heat insulation coating; amply padded with insulating fabric and rag layers and mounted in 8 resilient mountings on the chassis which is one of the characteristic features of the well proven and tested design of Škoda Passenger Cars.

The chassis frame, comprising the front fork and the central tube — is the steel backbone of the car, displaying exceptional sturdiness and rigidity particularly when subject to torsional stresses on roads of poor condition and at high speeds. This resistance against torsional effort is of particular advantage not only where the general durability of both the Škoda chassis and cars is concerned, but also for its outstanding running properties, proverbial especially under the most arduous conditions.

The engines of the Škoda cars are of exceptional durability, operating economy and invincible dependability under any weather conditions, whether it be in arctic frost or in the scorching heat of the tropics. This engine has not been designed so as to increase its peak performance to the detriment of durability and running economy, but first of all as a sensitive engine of high economy, which — in spite of its relatively small swept volume 1.2 litres or 73.22 cu. in. – enables the car to develop remarkable average speeds. The lubrication system is of the circulation, forced feed type, with a by-pass oil filter fitted with a felt cartridge and an overload relief valve enabling pressure setting. The water cooling system incorporates the water pump and thermostatic temperature control with by-pass. The horizontal carburettor of 32 mm or 1.26" dia. is mounted on the intake pipe line, favourably pre-heated from the exhaust. The ignition is of the dynamo-battery type, 12 V; the distributor is fitted with an automatic ignition timing device. The dynamo of 200 W output together with the fan and the water pump are driven by a Vee-belt from the crankshaft. The starter motor of 0.8 HP output has a hand operated pinion the control rod of which is conducted to the dashboard.

The clutch is dry, single-plate; its smooth and jerkless operation being ensured by a sprung plate with asbestos friction lining.

The gearbox together with the engine crankcase and clutch housing form a single unit, resilient-mounted on three extremely soft and flexible rubber mountings. It has four forward speeds and one reverse. All the gears are of high quality chromium-nickel steel, case hardened and heat treated; with the exception of the 1st and the reverse speed gears, all the gears are helical, noiseless. The third and the fourth speed gears are fully synchromesh, while the second speed gears are fitted with a device enabling easy shifting.

ŠKODA 1200

The remote control gear shifting, effected by a hand lever located on the steering column below the steering wheel, is of remarkable lightness. The torque is transmitted to the rear axle by means of the two-part tube propeller shaft with 3 universal joints fitted with needle roller bearings. The propeller shaft passes through the backbone tube of the chassis frame, its centre bearing being suspended in the frame by means of a rubber-mounted sleeve.

The rear axle has swinging half axles with independent wheel suspension and a cast steel centre case, firmly connected to the central backbone tube. The sprung axle shafts, transmitting both the torque and the braking effort, are fitted with rubber bushes. The suspension is effected by a transverse leaf spring attached to the centre case by two yokes and connected to the axle shafts by means of rubber sleeves springing is efficiently assisted by lever type hydraulic dampers secured to the rear cross member.

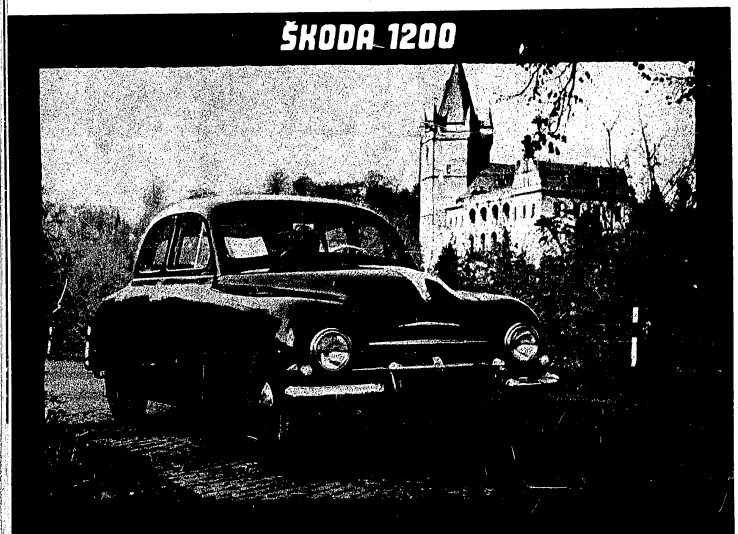
The front axle carries also independently sprung wheels, suspended on two trapezoidally arranged wishbone arms. The shorter top arm forms an integral part of the hydraulic suspension damper attached to the side member. The bottom arm is formed by the leaf spring, the eyes of which are fitted with rubber bushes assisted by safety links. The parallelogram of the front axle is designed with such precision, that the track of the car practically does not vary at extreme bump and rebound positions.

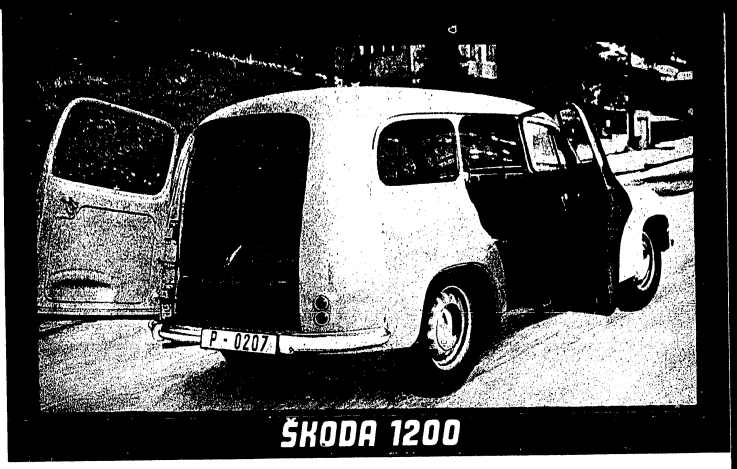
The steering is direct, being of the worm and nut type actuating steering arms and rods. The play of the ball joints is automatically adjusted. The steering can be optionally mounted either on the LH or on the RH side of the car.

The foot operated brake and the hand brake are fully independent: the hydraulic foot operated brake acting on all wheels, while the mechanical hand brake acts on the rear wheels only.

The wheels are of pressed sheet steel, enabling the fitting of oversize tyres of 6.00—15" size. The tube type radiator is fitted with a blind. The fuel tank is fitted to the engine bulkhead underneath the bonnet, fuel is fed to the carburettor by gravity.

The chassis has a central lubrication with oil from the lubrication oil pump, pedal-operated from the driver's seat. This brief summary of the principal features of the chassis alone cannot naturally outline a complete picture of the quality and performance of the car, nor do justice to all its advantages, which





are not so evident at first sight as those of the body. To ascertain this in the first place, it is necessary to test the car: on well conditioned and rough roads, in dense city traffic, on sharp bends of highland roads, on level highways, on rough, stony and muddy tracks. It is surprising how even a utility car of lower price category can equal the riding comfort of big cars at high speed average, enabled particularly by its exceptional road holding. A short test trip is not sufficient to reveal further important characteristics of this car: dependability, operating economy and long mileage, permanent proverbial features of the Škoda vehicles in the past as well as at present, ascertained by every car owner during operation of his vehicle. Cases are not unknown of cars of this make having covered 300,000 km or 186,000 miles prior to general overhaul — thanks to the advantageous design, advantageous dimensions of the most important components and use of best quality materials combined with competent worksmanship so as to obtain the highest quality.

The operating economy resulting from the exceptional durability of the car is backed by its low fuel consumption, never exceeding 8 litres per 100 km or 31 miles per Imp. gal. at a medium speed average; increasing but slightly when driving continuously at peak averages. The oil consumption of the engine is almost imperceptible, being practically reduced to the quantity needed for periodical refills. The sturdy design of the Škoda 1200 chassis has enabled it to be used — subsequent to slight modifications, particularly by using larger size tyres – for fitting of a number of typical utility bodies. These are the following models: Estate Car (Station-Wagon), Delivery Van and Ambulance Car.

The Estate Car (Station Wagon) is a practical combination of the passenger car and delivery van. It can easily accomodate — similar to the passenger car — 4 to 5 persons with plenty of luggage, or 350 kg (770 lb) payload goods, and can be easily — by simply folding down the backrest of the rear seat — converted into a delivery van of 500 kg or 1100 lb payload, with as two members of the crew on the front seats.

The outer appearance of the body is designed so as to meet all the requirements of riding comfort and driving sa-

fety, to ensure full advantage to be taken of the payload compartment as well as comply with modern views concerning the appearance of the car comparing well with the passenger car from which it is derived. The general finish of both the car and its equipment also equals that of the passenger car.

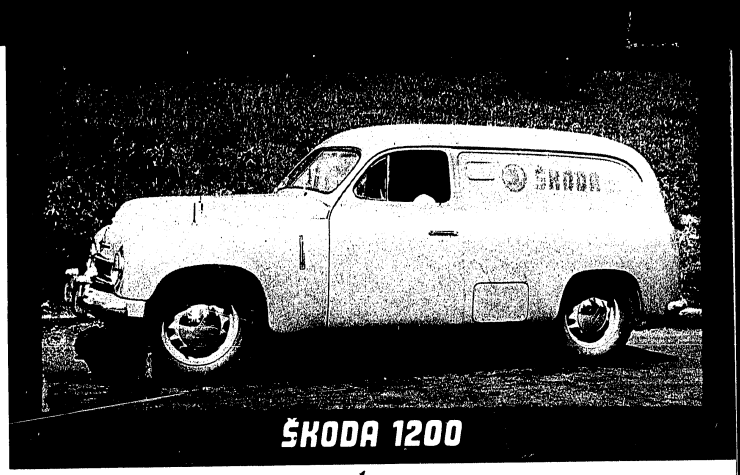
The all steel body is of the welded shell design with extremely roomy interior, fitted with two doors ensuring access to the front seats, one side door on the RH side and an additional single-panel tail-door at the rear, enabling free access to the enlarged rear compartment with cargo platform. The interior is fitted with amply dimensioned windows, the size of which provides for increased riding comfort and driving safety.

Its general arrangement gives the vehicle — though designed for utility purposes — both the appearance and the characteristics of a comfortable, rapid, sensitive and smart passenger car, which will be found of particular advantage when travelling with extra voluminous and heavy luggage.

No less advantageous as well as smart is the model Škoda 1200 Delivery Van of 500 kg or 1100 lb payload, the interior of which is divided by a partition into the driver's and mate's cabin and the spacious rear payload compartment taking full advantage of the complete width of the flush-sided body and accessible from the rear through a single-panel door with a large window. Its operating characteristics — speed, sensitiveness and riding comfort — are as good as those of the passenger car, while the slight increase of fuel consumption caused by the higher gross weight can by no means disturb its operational economy.

Another, special purpose model, is the

ŠKODA 1200



ŠKODA 1200

Škoda 1200 Ambulance Car, enabling easy transport of two patients lying on stretchers with one attendant in the patient compartment (whose seat can be converted into an emergency cot) and with the driver and his mate accomodated in the front cabin.

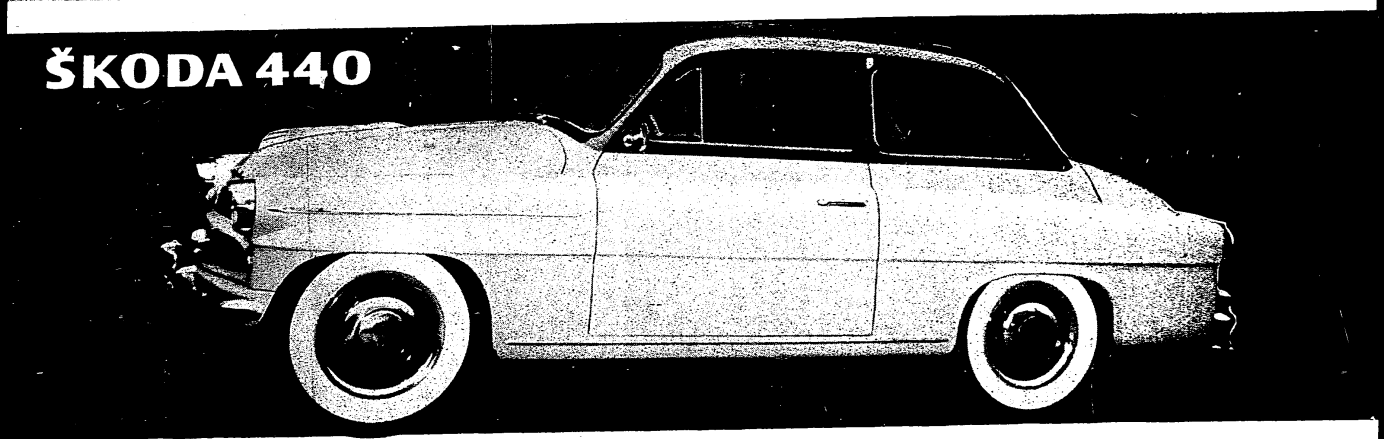
Everything which has been said with regard to the design and appearance of both the Estate Car (Station-Wagon) and the Delivery Van, applies to the Ambulance Car. The model differs from the former two only by the rear patients' compartment, displaying a solution of equal advantage and ingeniousness. An easy and prompt access to this compartment is ensured by a wide single panel tail door tipping down along its bottom edge and forming the loading platform for the stretchers, when tipped. A side door arranged in the RH side of the body, provides for another entrance into this compartment. The stretchers for patients are arranged on the LH side viewed in driving direction, above each other. They are 190 cm or 75" long, enabling so easy transport even of tall patients.

The bottom stretcher can be slid on wheels into the guide on the cabin floor; while loading or unloading the top stretcher, the tail door serves for a lever, thus facilitating this task to such an extent as to enable a person to master it single-handed. The RH part of the rear compartment houses a seat for the accompanying attendant, facing the road; the seat is adjustable and can be converted by means of an extension into an emergency cot able to accomodate a third lying patient.

In cold weather, the cabin can be heated by warm air, heated by means of a standard-mounted hot water heater.

The spare wheel is located in a special compartment accessible from the rear by removing a special lid located under the cabin door. The car equipment, principally equal to that of the original passenger car, is completed by the fire extinguisher located in the driver's cabin.

The Škoda 1200 Passenger Cars as well as their utility modifications give further evidence of the long lived tradition of the Škoda vehicles — products giving the best equivalent in valuable, reliable and economical service — being in full swing and ready to proceed along the line of technical progress, thus ensuring profit and pleasure to its owners, the ranks of whom are ever increasing.



THE NEW ŠKODA 440

ING. VLADIMIR MATOUŠ

Some time ago rumours began to spread in the circles of initiated motoring experts of the range of the ŠKODA passenger cars being enlarged by another model. These rumours were confirmed on the occasion of the Brussels Automobile Salon this spring, where the latest ŠKODA model was exhibited foi the first time, causing a real sensation due to the smart appearance of its body as well as the flawless execution of its de luxe design.

The latest model, which will bear the name of "ŠKODA 440" has only just been introduced into mass production and will be delivered within a few months. It is slightly lighter than the well renowned ŠKODA 1200 — the production of which as a heavier roomier vehicle suitabe for fitting with a number of special purpose devices will continue — having, however taken over from its elder brother numerous common components in addition to its general conception.

Its engine of 68 mm or 2.68" bore and 75 mm or 2.95" stroke (1089 c. c. or 64.99 cu. in. swept volume) can develop a maximum power output of 42.5 HP owing to the advantageous modification of the combustion chamber in addition to the fitting of a new model downdraught carburettor. As the basic power output, however, the output of 40 HP at lower engine speed has been chosen, which is also used for the new model dezignates "ŠKODA 440"-4 cylinder, 40 HP. The fuel transfer pump which

feeds fuel from the tank, which has been transferred to the rear of the vehicle, is driven by the front cam of the camshaft, being fitted to the timing gear cover in a place ensuring excellent cooling by a direct air stream from the fan. The air filter complete with intake silencer is of new design, being arranged transversally above the cylinder head cover.

The gearbox will be fitted with locked synchromesh of all the three highest speeds. The rear axle fitted with swinging half axles of the usual ŠKODA design will be modified by reverse mounting of the taper roller bearings of the crown wheel. In addition, a telescopic suspension damper will be fitted.

Due to the shorter wheelbase, the position of the steering unit has to be modified — the steering arms are now directed forward; the steering unit is now completely symmetrical with an additional relay lever. The 15″ wheel rims are fitted with 5.50—15″ tyres.

The "ŠKODA 440" body is of a completely new design, differing considerably from the ŠKODA 1200 body in its general conception. Contrary to the former model, more articulated lines together with advantageous reinforcements have been used, particularly in the case of the radiator grille and more extended rear mudguards with a combination tail lamp. The chromium plated accessories are not so scarce as formerly being used, on the contrary, to enhance the effect of its general appearance, particularly that of the de Luxe model which will be produced parallel with the standard model. Some modifications of the chassis design will also appear (gear shift lever in the centre of the car, etc.).

In the first place, however, the car attracts attention by the panoramatic arrangement of its window glasses, taking full advantage of the rear window of size and rounded shape equal to the windscreen. Owing to this arrangement, this car of moderate dimensions can be compared with far larger de Luxe cars, competing with them successfully also with its smart general appearance.

The body is again of the flush sided design; the comfortable front and rear seats each provide accommodation for two persons. Entrance is effected through 2 wide doors enabling direct access to the front seats, while the rear seats can be reached after the front backrests have been folded down. The outer door handles are of the lever type unfaired to ensure more comfortable opening.

The interior of the car is equipped in a manner similar to the equipment of the ŠKODA 1200. The riding comfort of the passengers is the motto and nothing like to enhance it has been ommitted, even though — naturally — certain restrictions with regard to excessive spaciousness have arisen. This does not apply, however, to the luggage boot which — though sharing space with the spare wheel and fuel tank — remains exceptionally spacious and roomy.

The operational properties of the car are typical of the ŠKODA cars. Exceptional road holding and well balanced cornering at high car speeds together with superb springing enable remarkable averages to be attained. The engine of higher power output ensures an increased maximum speed of 110 to 115 km or 68 to 71 miles per hour. Both the steering unit and the brake system of the car are as safe as ever.

The fuel consumption — due to the carburettor fitted with fuel economizer — does not exceed 7 litres per 100 km (40 miles per gallon) on a medium average, and the car will certainly live up to the reputation of its ancestors as far as dependability and durability are concerned

The purpose of this brief outline of the design and layout of the new ŠKODA 440 model is to give preliminary general information to all the friends of the ŠKODA cars who hopefully await this latest product of the Czechoslovak motor industry.

More detailed information will be found in some of the next issues of our periodical.

FROM GENEVA TO THE NORTH CAPE

10,000 km with a ŠKODA Car

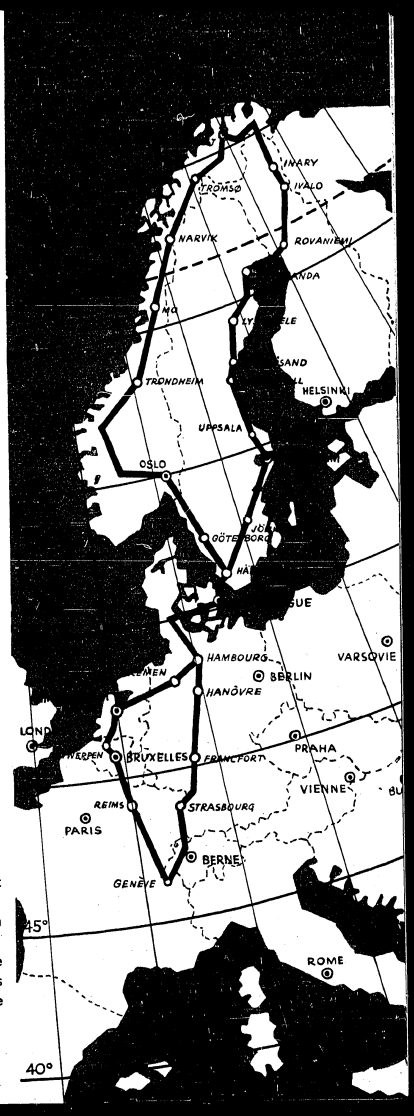
We shall not mention the journey through Germany which takes place mostly on highways nor about the bombed out cities which are feverishly being renovated. Nor about Denmark, that charming country where everything is bright, smiling, rich, and across which runs a perfect road, about Denmark which we left with a longing to return and spend our holidays there another year . . .

The ferry which is taking us from Denmark to Sweden is kept in excellent condition and already here we meet with the well known Swedish cleanliness. We get tickets on the platform without being obliged to leave the carriage and custom formalities take place on the ship.

After about half an hour's journey there appears Helsingborg above which looms the medieval tower of red bricks. We disembark and immediately must get used to left hand driving. We are passing through the pleasant little industrial town of Jönköping and drive round the Vatern lake. In a short while we are camping on its shore.

The next day we leave the beautiful camp with regret. Other surprises await us!

The car is taking us through the rich country of fields and meadows to Lindköping, then to Norrköping, all the time along the Baltic sea. One of the items of interest which we should adopt is the



line drawn in the middle of main roads, which before a bend or culvert divides into a full line and a dotted one. It marks distinctly where one may and where one may not drive. Practically at all Scandinavian towns there is a by-pass.

Every town, on account of its structure, creates an impression of integral colour which we can always see. London is grey, Charleroi black.

On the contrary, Stockholm is rosy and blue. The main city arteries, where trams provide transport, are striking for their brightness which is probably the result of modern urbanism. The buildings of ferro-concrete or of steel construction have decorative façades of salmon coloured bricks. It is interesting that the main crossings are designed in such a way that they have multi-platform passages. There are here magnificent parks where the population enjoy the fresh air at every opportunity.

A high standard of living enables the Swedes to dress well and tastefully. Politeness and honesty predominate here. We strolled for a long time through the city and did not meet one policeman. But when we looked carefully, we noticed a faultlessly clad man in navy blue uniform and white gloves. This is the policeman, a figure which seems more symbolical than practical.

We are leaving the capital and drive on a fine road to the old university town of Upsala, where there is the greatest Swedish cathedral of bricks. After Upsala the beautiful asphalt road ends. We shall drive over 5,000 km on dirt road. From the touristic point of view we could not recommend you to drive to Finland on the coastal road winding along the Gulf of Bothnia which is very monotonous and without the possibility of access to the sea. A touristically more interesting road runs along the coast through Gävle, Sundsvall (with a large match factory) and Hernösand, where it is necessary to turn aside into Swedish Lapland.

The fairly narrow and rugged road leads through giant pine forests.

We are approaching Licksele. The road is partly good, partly like a corrugated sheet, and winds between hills and lakes. We come into the fortified area indicating the Finnish boarder. In spite of the high latitude, it is very warm and we lunch with pleasure by the shore of one of the two thousand Swedish lakes. We cross the border without the least difficulty, apart from a foreign exchange control.

After checking the car in Tornio, the first Finnish town, we head directly to the north.

The Finnish roads are very bad and those in Lapland even more so. The road which we took after having left the town is under repair within a distance of approx. 120 km as a result of which we achieved a very low average.

We pass the Finnish Arctic Circle at 6 p. m. and then merrily continue through the giant forest which is slowly becoming tundra. The temperature is, contrary to our expectation, fairly high (6°). In spite of that we are not tired and stop in order to prepare dinner. At this moment we are attacked by thick clouds of the well known northern mosquitoes. We drive on and enjoy the sight of thousands of small shrubs in blossom. When we approach Ival the road is full of trench culverts, sharp bends, steep slopes and descents like a toboggan run. And in addition, we drive continuously against the sun, which is not at all agreeable.

From Ivalo to Inari the road leads along the shore and actually it is rather

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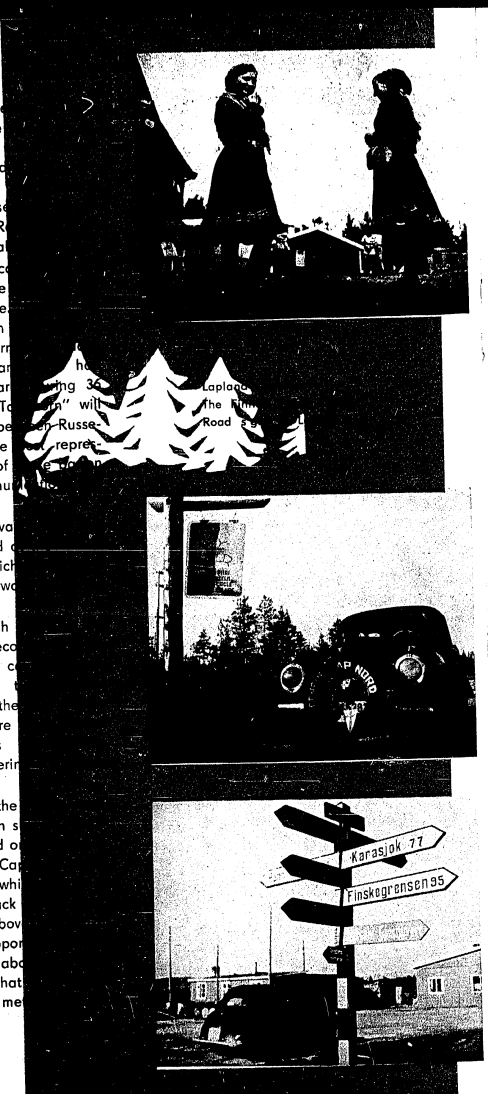


most northern rock of our old continent.

We have reached our goal. Here is Hammerfest. The steamer slowly enters the harbour, hoots and stops at the embankment. We disembark with all our equipment. We are in the most northern town in the world.

Hammerfest was completely destroyed in 1940. Today the town is again rebuilt. The houses are concrete cubes. As the streets are not paved, clouds of dust rise behind the bus.

Do you know that this large, lost village was the first European town to have electric illumination? It is easily understandable, because the inhabitants of Hammerfest live for 4 months in complete darkness.

In order to get to Russenes, where we left our ŠKODA car, we drive in a car from which we must get out at every bridge. From Hammerfest the road becomes narrow and zig-zag, winding along small fjords till at Alta it rises to an elevated plain 400 m above sea level.

Driving on this only artery is relatively easy, in spite of continuous bends and descents as we only rarely meet another means of transport. We have an opportunity to see how the Norwegians drive carefully, and we are tempted to say "too" carefully. They are extremely polite, when meeting another car they stop, when we eat at the edge of the road, they decrease their speed; when they see us, they greet us at a distance. Priority in driving is absolute and perhaps that is why during our whole journey in Scandinavia we have not seen one accident.

Camping in Norway is very popular, replacing the upkeep of hostels; therefore the majority of cars we meet is loaded with much luggage. Let us add at once that in southern Norway the camping spaces are clearly marked and free. But several times we had to drive 50, even 100 km before we found a bit of grass. The road wound continuously between the sea and rocks. This evening we stop at Langfjord. In spite of the late hour, it is 10 p. m., it is still light, but the sky is coloured with an undefinable pastel shade.

From Tromsö to Narvik the road is rather monotonous, except for the driver who has to be always on his guard. Firs appear again, above the ocean tower snowy peaks, it is a little like central Switzerland with the addition of the ocean.

The town of Narvik with 11,000 inhabitants which was destroyed in 1940, has been completely renovated.

From Narvik to Bodö there are several crossings over the fjords which, for the tourist, make the individual routes more interesting. Unfortunately we have to pay for it with a great shower which transforms the road in mud. When we reach the highest point marked with a boulder in the shape of an old Celtic tombstone (menhire) at 700 m, we quickly reach the Arctic Circle.

We leave the dry stony plateau where a cold wind blows, and slowly descend to the valley, where the vegetation grows luxuriantly as in the glasshouse. The road, however, is not as smooth as we would wish and unfortunately the tie-rod of the clutch breaks. We repair it with a wire and can drive on to Msojoen and Brekkvassels. Just before Trondheim there extend a rich agricultural region. The farmhouses, as in Sweden, are plastered with red earth (falun), and on the roofs there grows grass. The general impression is one of cleanliness and wealth. Trondelag divides the country into two parts. The north with

the plateau and the south with hills separated by long, narrow fjords.

Up to Oppdal the road is excellent, even partly paved. From here the shortest way to Oslo leads inland across Lillihammer, all the time on the State highway, while the road which we shall use takes us across the fjords.

The road leads into a narrow valley entering the fjord in Sundale which lies at the foot of a big mountain.

From Sundall to Andalsness there is one of the most beautiful routes. A good, relatively broad road, leading along the fjord, now through a tunnel, now on a headland from which it turns to a

dangerous road above a precipice.

In order to obviate the crossing by ferry from Molde to Vikebukt, we take a by-road on which we shall have to do our utmost to prevent an accident. Almost 60 km we drive on a real toboggan run. To escape the culverts we must change to first gear then quickly brake, which results in jumping of the rear. Our cases, thrown about helter skelter are a sad sight. This exercise in dexterity has its merry side, it is like a bobsleigh ride.

From Andalsness we head for Valldal, leaving the Ronsdal valley on our left hand side. The road, a real miracle of construction, is all hewn through rock, and leads across innumerable rivulets, one of which falls from the height of 180 m. Its broad bends are like hairpins. We drive through the Trollsteg Pass (850) and down a mild slope into the smiling alluvial valley which ends at the shores of Geirangerfjord.

To get across Geirangerfjord means a 4 hours' journey on a ferry. But who minds that? At last we are on the ship and in spite of the late hour of the day we shall enjoy the view of the fjord which is said to be the most beautiful in Norway. At last we land at Geiranger. The station is built on terraces in a steep, mountainous, basin-like gorge.

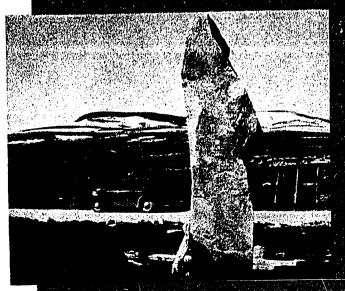
A soon as one leaves the wooden platform, the road begins to climb unbelievably, attaining a high altitude by means of innumerable sharp bends. To make way for a vehicle driving from the opposite direction would be impossible; at one place it turns like a corkscrew.

It is dark already; fog and rain accompany us again. We surprised a large herd of reindeer who ran away in front of us. Again it is too late to take some pictures, what a pity! It is eleven p. m. when we put up the tent in the fog.

The next day we head for Sogn and reach 1430 m above sea level; we drive round several icebergs, from which the water runs directly into the sea. At this sector we cross the Northern Alps with all their beauty, including the magnificent panorama. But luck is against us. The weather is terrible, it is cold, it rains and the fog does not disperse even for a while, almost continually we must have the lights switched on. In spite of that we get to Kaupanger and there we shall embark for Gudvender.

Sognefjord is a little less wild than the Geirangerfjord. The ship dexterously slips among buoys and cliffs up to the end of the straits which connect Gudvangen with the ocean.

The road leads first through the valley of Naerodal, then begins to climb



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General Considerat

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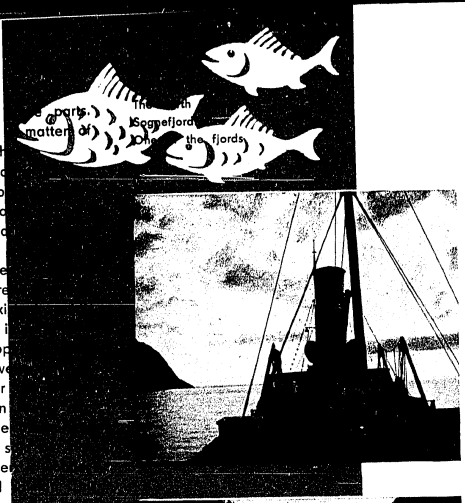
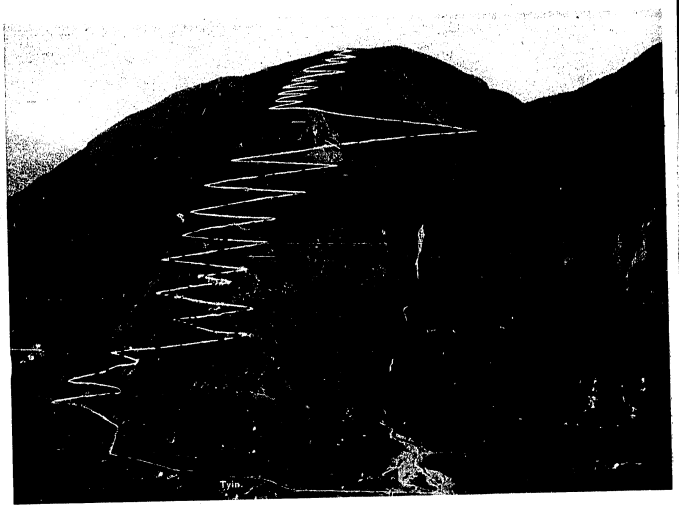




A typical Norwegian road.

The travelling speed averages were very high, even on bad roads about 80 km/hr., and 90—100 on good highways.

The consumption of oil appears to be «proportionately increased» and guarantees optimum performance.

The petrol consumption, although increased in the last sector of the journey (by 11 per cent) was due to especially heavy terrain conditions (serpentines, climbing, descents, constant bends) necessitating permanent changing of gears.

During the whole journey there were no mechanical defects (apart from the tie-rod of the clutch, ignition coil and condenser).

To decrease the strain on the rear suspension the rear axle was jacked up every night. The manoeuvreability during driving was perfect.

The ratio of the weight of the car to the output of the engine is during acceleration rather less favourable, but that is compensated by the comfort of the interior, very agreeable in the case of a car of this performance.

In conclusion I can say that we were very satisfied with the ŠKODA car and that my fellow travellers, also motorists, appreciated all its advantages.

Gérard Chervaz,
Rue de Berne, 13, Genéve

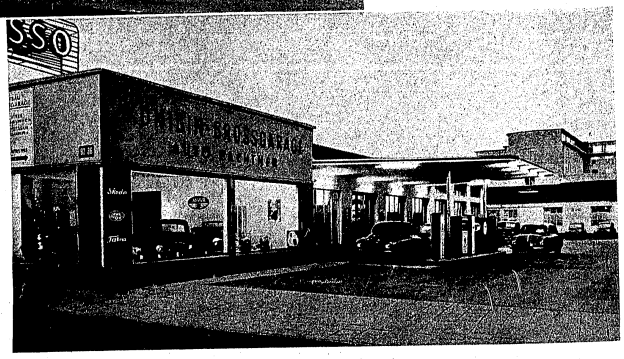
Geneva, September 6th, 1954.

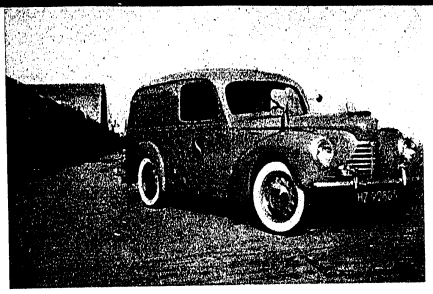
FROM ALL OVER THE WORLD

A small example of the great care which Messrs MAS at Djakarta give to the cars entrusted to it. In a few minutes already the satisfied owner of the ŠKODA car will sit behind the steering wheel. Photo: Studio Tong & Tim.

Partial view of the service station of Messrs. MASS, representing the ŠKODA cars at Djakarta. Photo: Tong & Tim.

A partial view of the up-to-date equipped enterprise of Messrs. Königin-Gross-Garage (Auto-Pachtner) at Munich in Germany, representing the ŠKODA and TATRA cars and JAWA-CZ motor-cycles. A two-story garage on a site of more than 3,500 sq. metres is under construction.

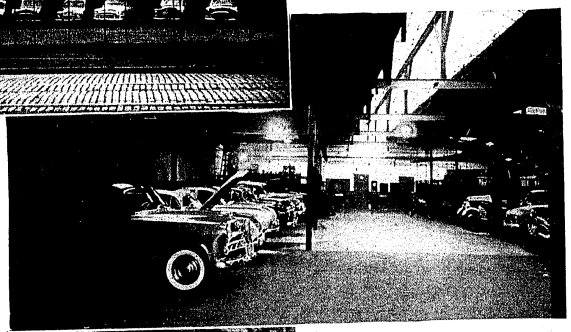


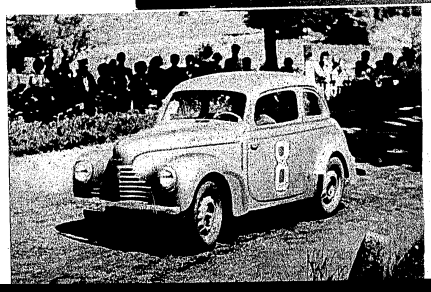


FROM ALL OVER THE WORLD

The ŠKODA delivery van of Messrs. ARTICO of Rotterdam in the Netherlands which has driven 185,000 km without repairs.

Messrs. Aschoff Co. at Krefeld, representing the ŠKODA and PACKARD cars is renowned for its high standing and care it gives to its customers. In order to quickly satisfy all the requirements of the owners of the represented makes, it has perfectly equipped service stations, as shown on the following pictures from the assembly hall.

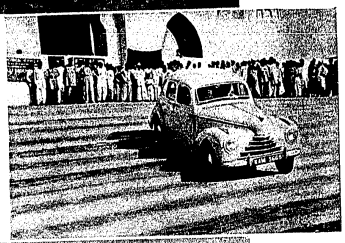




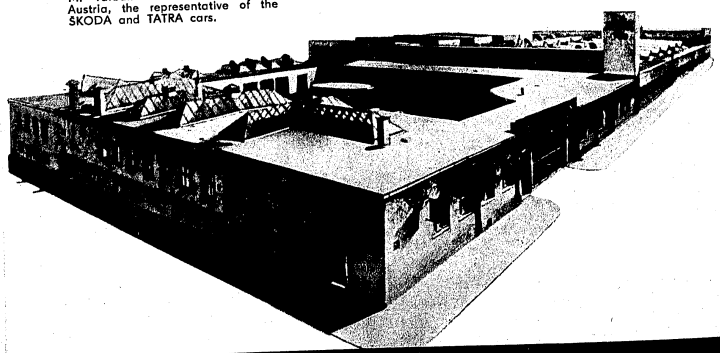
Monsieur Paul Macchi of Luzern who represents the ŠKODA cars, not only sells cars of this excellent make but proves also their quality with his personal participation at various races and trials where he ranks with the ŠKODA car among the first winners.

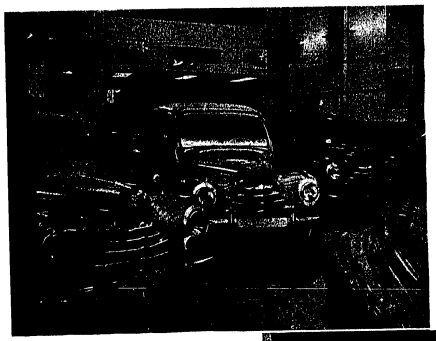
FROM ALL THE WORLD

ŠKODA GALA DAY in Karachi. It can be seen that not only the quality of the cars but also the ability of drivers and their driving art had to undergo hard tests. Photo: Ing. Hylmar.



The administrative buildings and the repair shops of the firm of F. M. Tarbuk & Co. in Vienna in Austria, the representative of the ŠKODA and TATRA cars.





FROM ALL THE WORLD

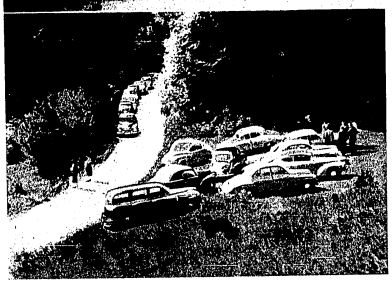
The ŠKODA ambulance car handed over to the National Guard in Egypt.

The sales rooms of the firm of OTOAK, general representative of the ŠKODA and TATRA car for Turkey. — Foto: Zeki.

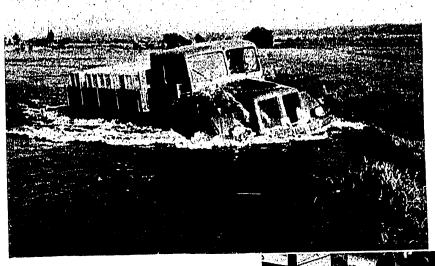
Messrs. AUTANA in Sao Paulo, selling the ŠKODA cars, has well equipped repair shops and is ever ready to give the necessary care to the entire satisfaction of their customers.

FRO... WORLD

Everywhere where ŠKODA cars are bought, there their owners become one of a large family. Witness two snapshots from Switzerland. The first of them, before departure from the town and the second picture taken at a joint picnic in beautiful country.



From the opening of the exhibition at Helsinki. The stand of the Czechoslovak ŠKODA and TATRA cars and JAWA-ČZ motor-cycles held the interest of serious buyers. The Zetor-Diesel tractors were here also exhibited.



The TATRA 111 lorries are popular not only on acount of their economy but also for their ability to master all terrain obstacles.

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We expect that you too, will send interesting pictures from your milieu, from your trips, races and trials for the information of other readers of our magazine.

The editor.

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The spaciousness of the repair works of passenger cars, safety arrangement and cleanliness make a good impression on every customer at the entrance of the large hall of the firm H. Englebert — Den Haag in the Netherlands.

FROM ALL THE WORLD

The stand of the ŠKODA DISTRIBUTORS PTY LTD., at the exhibition in Melbourne. Photo: Edwin G. Adamson.

Czechoslovak Motor Buses and Commercial Vehicles

1955

ZDENĚK V. KLEINHAMPL

Passenger cars and commercial vehicles, motor buses and various special purpose vehicles made by the well reputed Czechoslovak ŠKODA and TATRA automotive factories are gaining ever increasing popularity throughout the world. Both these factories are amongst the first automobile producers in Europe, being real pioneers of motoring in Central Europe. Their names have been recorded many times in golden letters in the history of the technical progress of the world automobile production. They have often struck a new path for advanced, revolutionary engineering ideas, anticipating the then up-to-date engineering methods by dozens of years and indicating the future development.

The world-wide reputation and popularity of the ŠKODA and TATRA products, however, is backed not only by the tradition of many years standing of these trade marks and the peak technical standard of their designs and products, but is based on the exceptional quality of their products in the first place. ŠKODA — the trade mark of the biggest industrial concern in Central Europe — has become the direct symbol of perfection, reliability and outstanding quality of products in many a country. The TATRA Works gained a reputation as makers of high quality stage coaches a hundred years ago and luxurious railway carriages a couple of years later. For sixty years now they have been producing motor vehicles which have readily acquired a well deserved reputation as being vehicles that are absolutely dependable, outstandingly durable and practically invincible and indestructible under any working conditions whatsoever. A number of motor vehicles produced 25 or 30 years ago which are still in use and giving valuable service to their owners after having covered hundreds of thousands miles without replacement of their main components, give the best evidence of the above facts. Not many of the present world — reputed motor [illegible] can display similar evidence.

Wherein lies the secret of [illegible] tional quality and long life [illegible] choslovak motor vehicles? [illegible] place, it is the result of the [illegible] of experienced and highly qu[illegible] perts who give the utmost ca[illegible] production of every single part, no [illegible] now seemingly trifling. In addition, they use only the best, well tested materials. On principle, all the important components are dimensioned so as to be able to resist higher stress and strain than those to which they are subjected in service. Owing to this method, the respective components are not subjected to the maximum permissible material stresses even while giving their peak performance, and are consequently protected against the defects and premature wear likely to occur in vehicles of other makes.

The Czechoslovak automobile factories do not attempt to reduce their production costs to the detriment of either materials or the quality and excellency of workmanship, having made their principal aim years ago to compete on the world market by means of the quality and economy of their products in the first place. For the customer — particularly where motor buses and commercial vehicles are concerned — the purchase price of the vehicle is actually of less importance than its much more important operating economy, which means first of all low operational costs and as little routine maintenance and few repair costs as possible. Consequently, only a motor vehicles of really high quality can give value for money under such conditions. The Czechoslovak motor works have never considered as their aim the building of a new model likely to become the "bestseller" or "dernier cri" at the next "Salon d'Automobiles" at all costs, but always prefer to improve continuously the quality, performance and economy of well proved and tested models. For this purpose they employ an extensive staff of experts for research and development work, who corroborate simultaneously with research institutes in the line of automotive and transport engineering as well as with the actual transportation practice. In addition, the ŠKODA and TATRA Works in their present form do not face each other as rivals, being — on the contrary — in close co-operation in order to attain the highest possible standard both technical and wih regard to quality, of all the products of this line of the Czechoslovak industry.

Owing to these facts, motor vehicles of their production range nowadays among products of the best quality and highest economy on the world market, gaining ever increasing popularity as well as a prominent place on every market to which they have been introduced.

In 1955 the Czechoslovak automobile industry is delivering large selection of large motor buses and heavy duty vehicles, mostly based on earlier models which have already been well tested and proved through long years of service under the most strenuous conditions.

Models of various designs and constructions with regard to engines and chassis are available, perfectly suitable for operation in any off-road terrain under weather conditions of every description.

ENGINES.

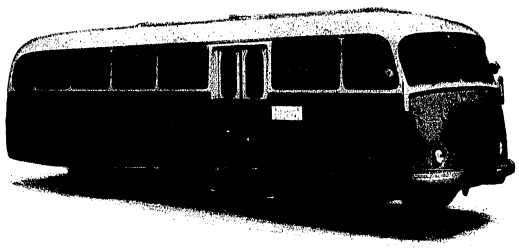
All the latest large capacity buses and heavy duty vehicles of Czechoslovak make are fitted with high efficiency, reliable [illegible]ical compression ignition, [illegible]e Diesel engines. In comparison [illegible]he remaining combustion engi[illegible] Diesel engines are outstanding due [illegible] their exceptional operating economy, being [illegible]ble to convert the largest [illegible]t of the thermic energy contained in the [illegible] into mechanical work. In addition, they operate on heavy and cheap fuel. Under identical working conditions, a Diesel engine consumes at least 30% less fuel than a spark ignition engine. As can be seen, the operational costs are extremely low.

The ŠKODA 706 buses and trucks are fitted with six cylinder in line, water cooled engines. The cylinder heads house swirl chambers into which fuel is injected under a pressure of 150 to 150 kg/cm^2 or 1991 to 2133 psi. The swirl chambers enable the fuel to be properly mixed with air, thus ensuring perfect combustion, high efficiency and smokeless exhaust. To facilitate cold engine starting, heater plugs are screwed into the sides of the swirl chambers. This water cooled engine is outstanding for its silent operation, perfect combustion and consequently practically smokeless exhaust.

A thermostatic temperature control ensures that the temperature of the cooling water is maintained at the correct value; this can be also adjusted by means of the radiator shutter. The TATRA commercial vehicles have a twelve cylinder V-engine with direct fuel injection, air cooled. Each cylinder row has its respective cooling blower located at the engine front. The engine cooling system is simple, requiring practically [illegible] attention and having high [illegible] reliability under any weather [illegible] Consequently, it is found [illegible] age for heavy duty tr[illegible] off-road terrain, as th[illegible] to be garaged outdo[illegible]

Air cooled engine[illegible] vehicles are a special fe[illegible] Czechoslovak industry, which has longer and greater experience concerning their development and operation than any other makers in the world. Air cooled engines warm up quickly to the correct working temperature, consequently being less liable to wear. In the case of air cooling, sufficient temperature drop is always possible, enabling the engines to be properly cooled even while operating for a prolonged period under maximum load, or in the tropics. In addition, any trouble while topping-up with water, so essential in tropics, is eliminated.

Both the ŠKODA and the TATRA Diesel engines have crankshaft consisting of several flange-bolted parts and running in their respective crankcases on precision roller bearings enabling their extremely light rotation. In both cases the dependable and well proved MOTORPAL fuel injection system has been used. Engine parts most liable to normal service wear (e. g. pistons, connecting rod bearing



ŠKODA 706 RO Charabanc fitted with KAROSA body.

liners, etc.) are easily renewable — mostly with the engine in position. In addition, all the components and mechanisms requiring a periodical service inspection and adjustment are easily accessible, though both engines require only trifling routine adjustment.

The engines are fitted with dependable, dry, twin plate disc clutches, ensuring smooth, trouble-free transmission of the engine torque and being extremely resistant against wear. An air compressor, feeding pressure air to the brake system of the vehicle or for type inflation, is mounted on each engine.

The utmost attention has been paid to the filtering of fuel and intake air, thus reducing wear of the fuel injection system and the engine to the minimum.

The TATRA air cooled Diesel engines consist of standardized components, from which can be built a whole series of engines of various power outputs as well as a varying number of cylinders, e. g. an eight cylinder engine for the TATRA mountain (hill-climbing) bus. As these engines consists mostly of identical components, the storage of spare parts in repair shops as well as in road transport shops is extremely facilitated.

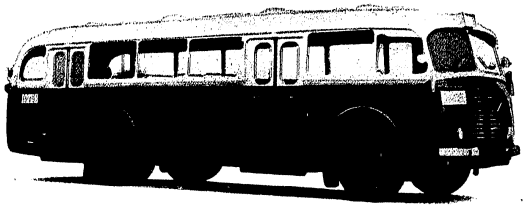
ŠKODA 706 RO MOTOR BUSES.

The standard ŠKODA 706 RO travelling buses have been found of great advantage particularly in regular passenger service on lines of medium length, especially as a current travelling means enabling regular communication between towns and country places. Thousands of buses of this well proved type serve for the transportation of working people to their respective working places. They are perfectly suited for this service due to their exceptional reliability under any working conditions, summer or winter, on roads of any condition, their extremely easy control in dense city traffic as well as their seating capacity and emergency standing accomodation. An extremely low fuel consumption together with trifling maintenance costs ensure extremely economic operation of this efficient bus.

The body is extremely sturdy and light at the same time. It protects the passengers well even in the case of road accidents. The comfortable, softly cushioned seats are aranged transversally to the longitudinal centre axis of the bus. The interior of the bus is properly aerated through dome vent flaps; in cold weather it can be heated by the bus heater. Spacious boxes for the accommodation of small luggage are located in the bus interior along the side walls above the windows. Large pieces of luggage can be accommodated on the steel tube luggage rack mounted on the rear part of the bus top. This rack can accommodate large selection of luggage of the most varied shapes, sizes and is of great advantage particularly for long distance journeys.

The bus chassis is designed so as to resist thoroughly even excessive strain on roads in bad condition or in off-road terrain. Being made of high quality material and amply dimensioned, it is sturdy and dependable.

The gear box has five forward speeds and one reverse. The five speeds enable full advantage to be taken of the engine power output in any terrain. All the wheels are of the spoke type, of



ŠKODA 706 RO Bus for city transport service (KAROSA body fitted).

cast steel with TRILEX three-section detachable wheel rims and high quality, low pressure 12.00—22 sized tyres. A particularly advantageous feature of the TRILEX rims is the possibility of extremely easy replacement of the wheels or the removal and fitting of tyres.

Driving safety in any traffic conditions is ensured by three different, completely independent brake systems: a foot operated brake, a hand brake and an engine brake. The foot operated pressure air brake acts on all the wheels. The hand brake is mechanical, acting on the rear wheels only. The engine brake closes the exhaust pipe line, simultaneously cutting-off the fuel supply; thus the engine acts as a brake by compressing the air in the cylinders and in the exhaust pipe line.

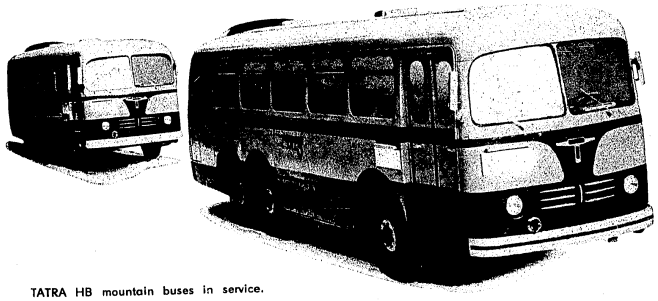
The driver seat is on the LH side beside the engine, the latter thus being particularly well accessible. The engine compartment is carefully insulated against the transmission of noise into the passenger compartment.

The same chassis can also be fitted with special charabanc bodies of a carefully designed, comfortable interior with exceptionally comfortable seats ensuring full riding comfort even on long distance journeys.

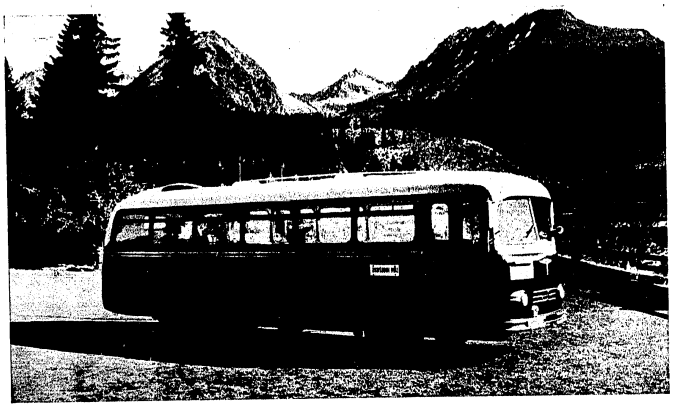
In addition, the same chassis can be fitted with special bus bodies for passenger transport. The outside appearance of all the ŠKODA 706 RO buses and charabancs is identical: at first sight, they differ by the design and number of their respective doors only. The passenger entrance door can be closed or opened by means of a reliable, remote-control electric-pneumatic system. The city transport bus has two two-panel doors — an entrance and an exit door.

TATRA HB HILL-CLIMBING (MOUNTAIN) BUS

One of the latest products of the Czechoslovak automobile industry is the special TATRA HB hill-climbing (mountain)



TATRA HB mountain buses in service.



TATRA HB mountain buses.

bus, powered with an eight cylinder, air cooled TATRA 500 engine. This bus is designed particularly for transport purposes in hilly terrain, rich in steep gradients and slopes, numerous turns and often poorly conditioned roads. The designers have therefore paid special attention to securing its perfect manoeuvrability and easy control even under such unfavourable conditions, having simultaneously done their best to ensure full riding comfort and ease for the passengers.

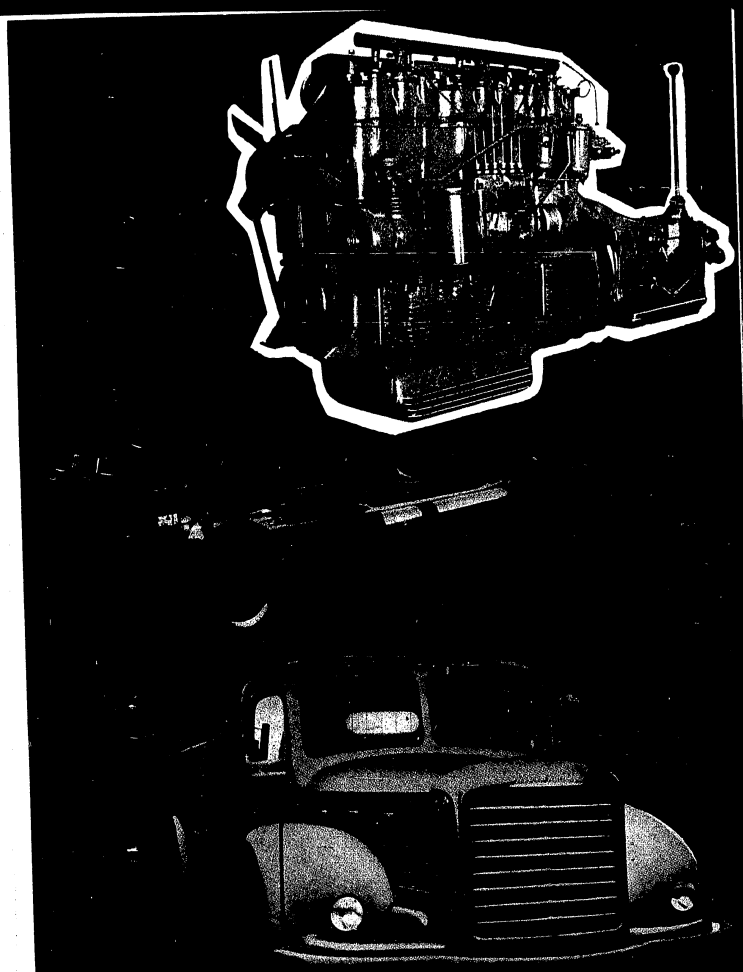
The bus has a self-supporting (structural) steel body with considerable resistance against distortion and carefully insulated against vibrations. The engine is located at the rear in a special compartment well insulated against noise. The economical air cooled engine, the fuel consumption of which is extremely low, is of particular advantage in hilly terrain, as it never gets overheated in hot weather, not even while climbing up long, steep gradients; in cold weather, on the other hand, the cooling system is not be endangered by frost.

The hill-climbing bus is of the three axle type, both rear axles being drive-axles. The single wheels are fitted with low pressure tyres 11,00–20" in size. The gearbox is located as far back as behind the rear axles, being flange bolted to the engine and having five forward speeds and one reverse. The bus is fitted with high efficiency foot operated pressure air brakes, a hand operated transmission brake and engine brake. Both the ventilation and the heating are electrically operated.

The bus can master a road gradient of up to 30%. Having such an exceptionally high climbing ability, it can easily climb all the steepest mountain road gradients known in Europe.

ŠKODA 706 TRUCKS

The principal assembly groups of the truck chassis are almost the same as those of the ŠKODA 706 RO buses, the main differences being the frame, the wheelbase and the location of the steering unit and of the pedal and lever controls. The rear road springs of the trucks are fitted with additional auxiliary springs which act only under heavy load. Owing to this arrangement, the springing is sufficiently soft both when the vehicle is under partial and full load. The fuel consumption is extremely low



when compared with the high transport efficiency.

For transportation of various materials and solid goods the ŠKODA 706 R model of 7300 kg or 16,000 lb is supplied, which is fitted with an open cargo platform of ample dimensions. For transportation of mostly loose cargos (soil, gravel, sand, coal, etc.) the ŠKODA 706 RS tipper is supplied. The all steel tipper platform can be tipped rearwards or to either side by means of the telescopic hydraulic hoist. The tipping mechanism can be engaged and controlled from the driver's seat.

TATRA TRUCKS AND TIPPERS.

The TATRA 11 R trucks and the TATRA 111 S tippers of 10 metr. tons or 22,050 lb capacity are the heaviest trucks of Czechoslovak make. Due to their appearance, power and performance, they are real mammoths among motor vehicles, able to tackle the most exceptional running and long distance transport tasks on well conditioned roads as well as in the heaviest off-road terrain. Their whole design enables them to resist exceptional strain under any working conditions. Vehicles of this type often operate with the utmost reliability and driving safety even in off-road terrain where any other truck completely fails. This is enabled in the first place by the design of the chassis with swinging half axles, and by the air cooled engine. During the last few years, these vehicles have steadily gained a world-wide reputation and sovereignty in their category as being capable of exceptional performance, outstanding durability and reliability even under the most arduous conditions and in any weather whatsoever, whether in the tropics or above the Polar Circle. The fact that the TATRA WORKS produces at present more trucks of 10 metr. tons or 22,000 lb capacity than all the other motor works in Europe together, is further evidence of their popularity. A fully loaded vehicle can pull one or more trailers of 22 metr. tons 48,500 lb gross weight on well conditioned roads.

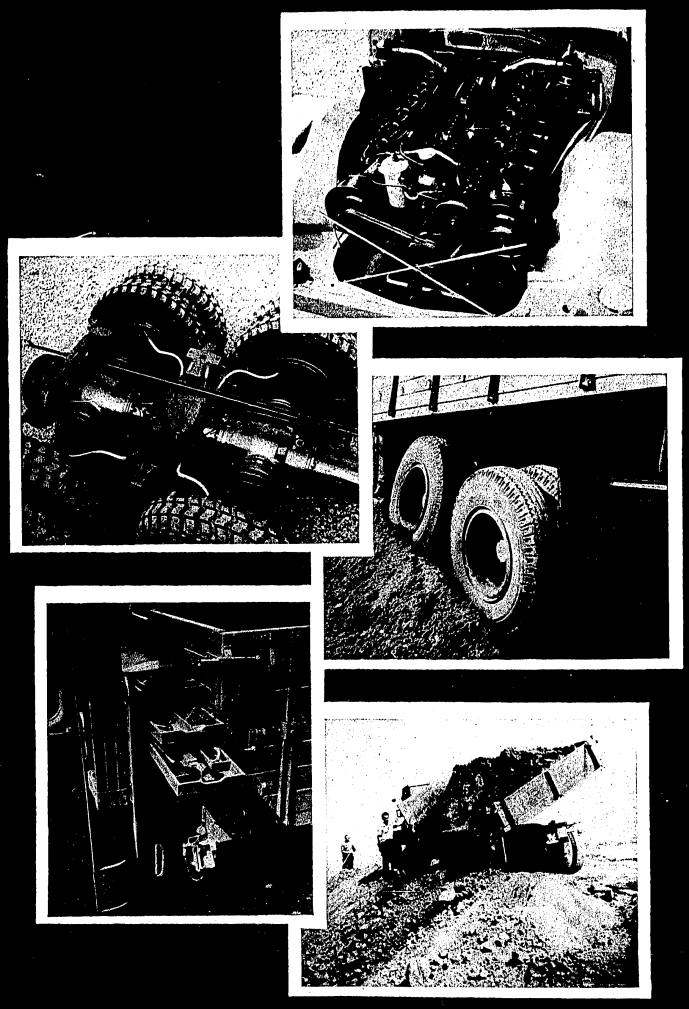
The chassis lacks the standard frame of average vehicles. The necessary structural system is formed directly by the flange-bolted housings of the principal assembly groups and by the backbone tube, housing the propeller shaft. This is the chassis of the so-called "backbone design", with which the TATRA Works surprised the world more than 30 years ago, and which has since become a characteristic feature of the greater part of both passenger cars and commercial vehicles of this make, having proved to be of extraordinary advantage in all of them without any exception.

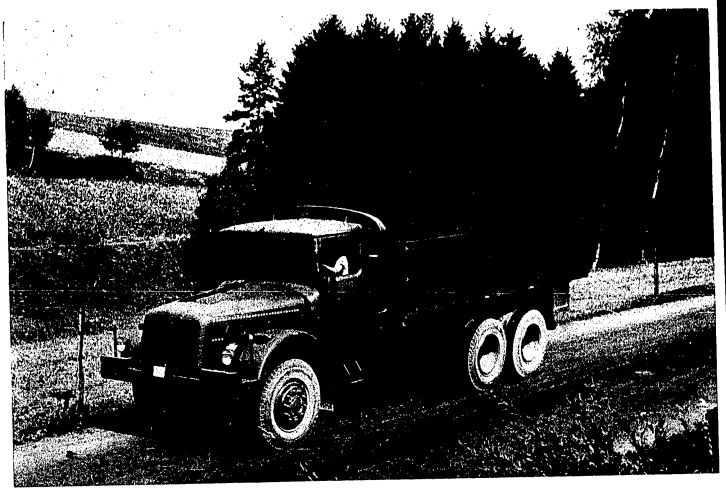
The chassis is fitted with swinging half axles and individual suspension of all the wheels, a road and off-road (reduction) ratio of the auxiliary gearbox and a differential gear lock. In addition to the rear wheels, the front wheels have their own drive which can be engaged in emergency cases. All these features ensure the exceptional advantage of the vehicle even while operating on roads in poor condition or in off-road, unconditioned terrain. If the vehicle encounters major obstacles, the respective half axles complete with road wheels swing individually, but practically without any effect to the body and cargo. Both rear axles have a permanent drive, while the front wheel drive should be engaged in emergency cases only.

The main gearbox has four forward speeds and one reverse. To facilitate shifting, the first and second speed gears are synchromesh. The auxiliary off-road ratio actually doubles the number of the standard speeds. Due to this arrangement, the vehicle has eight different forward speeds and two reverse ones. The auxiliary gearbox of the special purpose vehicles can be readily fitted to the respective drives of various auxiliary mechanism. The TATRA trucks have dependable pressure air brakes acting on all the wheels and a mechanically operated transmission brake. The wheels of the rear axles which carry the greater part of the payload are fitted with dual tyres. Thus the vehicle has a total of 10 wheels fitted with low pressure tyres 11.00—20" in size.

The driver's cabin can accommodate three persons and can be heated with warm air. By swinging up and suspending the backrest two beds are formed in the cabin, enabling night accommodation for two members of the crew.

The hydraulic tipping mechanism of the TATRA 111 S tippers is indetical with that of the ŠKODA 706 RS tippers.





TATRA 111 R — Truck.

DELIVERIES OF CHASSIS.

Apart from complete vehicles, the Czechoslovak motor factories deliver on request also bare chassis designed for the fitting of special models of bodies such as trucks, tippers, buses, charabancs, motor tankers, cranes, workshop and refrigerator plant vehicles and other special purpose vehicles designed for operation under particularly strenuous conditions.

In the case of the TATRA backbone tube chassis, the driver's cabin and the actual special purpose body (superstructure) are fitted to a special subframe which is then mounted on the backbone structure of the chassis. As the design of the body subframe requires great appearance, it is advisable always to order the suitable subframe complete with chassis direct from the works.

A wide range of the latest models of large capacity buses as well as heavy weight commercial vehicles of Czechoslovak production is ready to satisfy further thousands of discerning customers anywhere in the world.

The circle of fully satisfied foreign customers of the Czechoslovak motor factories is continuously increasing and here is the reason why: every one of them who once realises the exceptional quality, operating economy and valuable service of the Czechoslovak products remains ever faithful.

TATRA

TECHNICAL DATA OF COMMERCIAL VEHICLES

	Data		Make and Model				
			ŠKODA		TATRA		
			706 R	706 RS	111 R	111 S	
ENGINE	Number of cylinders		6		12		
	Bore × stroke	mm	125×160		110×130		
		in.	49.25×63.00		43.30×51.20		
	Swept volume	cm³	11781		14825		
		cu. in.	718.64		904.00		
	Cooling system		water cooling		air cooling		
	Compression ratio		1 : 18		1 : 16.5		
	Power output	HP	135		180		
	Speed	r. p. m.	1750		1800		
	Fuel consumption 1/100	approx. Imp. gall.	28 6.15		40 8.80		
CHASSIS	Wheelbase	mm	5000		4175 ± 1220		
		in.	197.0		164.4 × 48.0		
	Track, front	mm	1760		2080		
		in.	760		819		
	Track, rear	mm	1824*)		1800		
		in.	718		709		
	Tyre size	in.	12.00—22		11.00—20		
DIMENSIONS AND WEIGHTS	Overall length	mm	8285	7870	8300	8220	
		in.	326.0	310.0	327.0	323.8	
	Overall width	mm	2500	2500	2500	2500	
		in.	985	985	985	985	
	Overall height	mm	2400	2680	2580	2580	
		in.	945	1055	1016	1016	
	Dimensions of Cargo platform	mm	2350×5000	2300×4000	2340×5000	2350×4740	
		in.	925×1970	906×1576	921×1970	925×1867	
	Operating weight	kg	7400	7260	8100	8960	
		lbs	14244	16008	18522	19756	
	Carrying capacity	kg	7300	6500	10240		
	Permissible payload	lbs	14332	16096	22579		
	Climbing ability — 1st speed	%	32		52		
	Peak speed	km. p. h.	55		61.5		
		m. p. h.	34		38		

*) centre between both dual rear tyres.

	Data		Make and Model			
			ŠKODA 706 RO			TATRA H8
			Standard service	Charabanc	City transport	Mountain
ENGINE	Number of cylinders		6			8
	Bore × stroke	mm	125×160			110×130
		in.	49.25×63.00			43.30×51.20
	Swept volume	cm³	11781			9883
		cu. in.	718.64			562.86
	Cooling system		water cooling			air cooling
	Compression ratio		1 : 18			1 : 16.5
	Power output	HP	135			125
	Speed	r. p. m.	1750			1900
	Fuel consumption 1/100	approx. Imp. gall.	28 6.15			25 5.5
CHASSIS	Wheelbase	mm	5400			3570+1180
		in.	212.5			140.5+46.5
	Track, front	mm	1930			1880
		in.	760			740
	Track, rear	mm	1824*)			1880
		in.	718			740
	Tyre size	in.	12.00—22			11.00—20
BODY	Number of seats		40—49	49	20	44—46
	Number of standing accommodations		30	—	53	—
	Number of doors		1	1	2	1
DIMENSIONS AND WEIGHTS	Overall length	mm	10560			6420
		in.	415.8			252.8
	Overall width	mm	2500			3711
		in.	985			2350
	Overall height	mm	3250			925
		in.	1270			3000
	Operating weight of Bus	kg	8340	8570	8540	7181
		lbs	18386	18370	18827	15832
	Carrying capacity	kg	5500	5210	5460	7000
	Permissible payload	lbs	12125	11485	11937	15432
	Climbing ability — 1st speed	%	26 (with trailer of 5 metr. tons or 11,023 lbs) 20%			3750
	Peak speed	km. p. h.			68	8267
		m. p. h.			42	30
						60
						37

*) centre between both dual rear tyres.

TROLLEYBUS

KRAUS - SYROVÝ - SKÁLA - VESELÝ

During the last few years great progress together with many technical improvements have taken place in the ever increasing transport by trolleybus. In cities, the industrial centres of which are situated outside the boundaries, the trolleybus service has become an urgent necessity.

Due to their design, layout and well tested models, trolleybuses of Czechoslovak make fully comply with the highest requirements of foreign customers.

Technical Data:

Standard cargo	80 passengers
Temporary cargo	100 passenger + 100 kg or 220 lb
Maximum carrying capacity	6000 kg or 13228 lb
Weight of unloaded vehicle	10,150 kg or 22,380 lb
Permissible maximum speed	45 km or 28 miles per hour.
Number of wheels	4
Number of drive wheels	2
Size of wheel rim	10.00—20"
Size of tyres	12.00—20"
Nominal voltage	600 V
Rated output of traction motor	120 kW

The body is of structural design, welded from light steel rails. The crate, side panels and top form a single structural unit carrying the front axle, rear axle, motor, steering unit, air compressor power unit, etc. These parts can be easily and individually detached.

The body is of the three-door type, being sheet-metal-lined and provided with a coating of noise-insulating compound on the inside.

The passenger compartment has five drop windows, one drop window is also located on the LH side of the driver. All the windows are glazed with hardened safety glass.

A glazed box destination plates is located at the front of the vehicle above the windscreen windows.

The entrance door is located in the RH rear part. The centre and front doors are exit doors. The bottom part of the front door is glazed so as to enable the driver to observe the distance from the curb. Both the entrance and the exit doors have electric-pneumatic control.

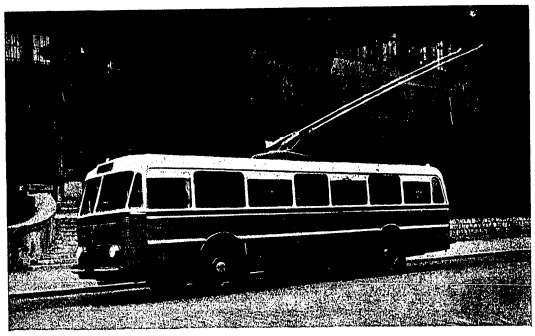
Sand spouts located underneath the seats next to the rear wheels can be operated from the driver's seat by means of an electric-pneumatic valve. They are of great advantage particularly during cold weather operation, enabling the driver to pour sand directly under the tyre while starting or while driving.

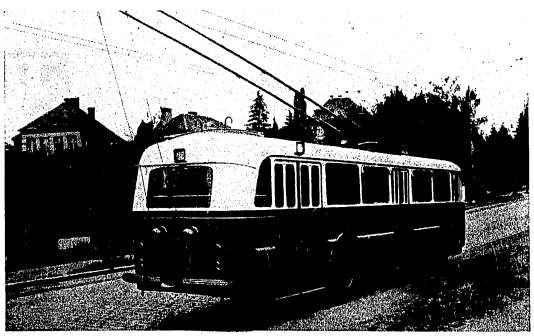
Both the front and the rear of the vehicle lane bumpers. The front end is fitted with a coupling eye for the hitch, while the rear end caries an automatic, sprung coupling hook for a tralier of gross weight of 16 metr. tons or 35,274 lbs.

The 8 Tr trolleybus has three independent brakes. The electrical brake is the most economic and most frequently used service brake. Being pedal-operated, it acts on the rear wheels. It is a high efficiency brake subjecting no part of the trolleybus to wear and therefore being of particular advantage. The other service (emergency) brake is the ŠKODA pressure air brake acting on all four wheels. This brake system is a part of the standard equipment of all our heavy duty vehicles such as trucks, motor buses, etc. When both the electrical and the pressure air brakes are applied, the trailer of the trolleybus is also braked with a suitable advance. The hand operated mechanical brake serves as parking brake. The electrical equipment of the 8 Tr trolleybus has several alternatives, one for temperate zone countries including Europe, another for the tropics and subtropics. The difference in the layout comprises the use of special insulations, efficient ventilation of the individual machines and devices and fitting of special intake air filters preventing the penetration of dust.

The 8 Tr trolleybus is of the automatic switch type, being fitted with a master controller of low voltage (24 V), with a series-wound traction motor.

While designing this type of trolleybus, special attention was paid to improving its operating properties, increased life, simplification of the design of some devices, simplified dismantling and reassembly and the elimination of excessively noisy operation of the vehicle.





Doctor Doret's Speed Record

Doctor Doret has had today every reason to be perfectly happy. That small motor car which he prepared for the "300 miles cross country" won in its class and fulfilled all the hopes which Doret had put into it and the sports club into Doret. It fought bravely in the bottomless dust of primitive roads, dried by the tropical sun, it drove safely through savanna and, above all, drove without outside help through the dried up riverbed of Rio Tercio. It is not easy to defend under strong competition the reputation of a foreign car which has to win trust. But just such a vehicle is needed by a doctor in this region on the outskirts of the pampas. Another five kilometres and from the hot darkness San Julio, Doret's home, will emerge. Tomorrow his routine life in a white overcoat will begin again and the laurel wreath will be hung by the young sportsman and surgeon in the waiting room of his consulting room. He will probably be welcomed by friends and in the afternoon will have to visit police headquarters to settle his recent fine for speeding. The road passes quickly, only the weather is rather peculiar — as if hell itself were getting ready for a carnivall. Gusts of gale whip the sides of the small car and blurr the visibility. A sand tornado is coming, a bad night can be expected.

•

Inspector Mario observed uneasily the man lying on an iron bedstead of the simply furnished police station. He was drunk, that is certain, but, besides that, he was injured and was beginning to put up a fight to regain consciousness. "What did Gregorio hear?" he asked the other uniformed man, who shared with him the ungainly sight of the unknown individual.

"They spoke Portuguese, sir, but they began in French and Gregorio does not know that language. This one here shouted that he was going to the capital to prevent a miscarriage of justice . . ." answered the sergeant.

"And then?"

«The pub owner, Savia, caught him by the shoulder and took him into an adjacent room. There they quarreled violently for a while, then returned and drank. Before midnight another car pulled up in front of the pub and two men got out of it. The quarrel restarted . . . What do you make of it, sir?"

Inspector Mario did not answer. He persistently thought of what mystery surrounded the unconscious man. He was found shortly after midnight on a highway on the outskirts of the town. He was lying near a deserted motor car and was brought to the station by a rancher, who was returning home in that ful **weather.**

"Did Gregorio see anything else?" the Inspector asked further.

"He vanished, sir . . . Everybody is scared of Savio! He is undoubtedly the worst type we know here . . ."

Inspector Mario dialled a number on the telephone.

He waited a few moments before he was connected with the night service of the federal prison.

"I need the name and an exact description of the prisoner who is to get the electric chair . . ."

"Oh, he is that Italian workman from the ranch at Rio Prito, sir! He was indicted of a hold-up and will be electrocuted at 4 a. m. You know the case, sir, it was described in the last bulletin of the criminal service!"

Inspector Mario still hesitated a second.

"Wake up the prison governor!" he then asked.

"He is up, sir! He just accompanied the district attorney and the priest to his cell. This Italian, as a matter of fact, insists that he is innocent."

A gust of the gale shook the windows of the station at San Julio. One minute passed, then a second, then a third. "Hallo!" shouted Inspector Mario insistently. His hand shook and his throat felt dry. The telephone network was without current — the tornado had broken the lines! The prison governor did not hear any more about the foreigner who had quarreled with Francisco Savia, the pub owner.

•

"Sergeant! Get the flying squad ready and arrest Savio!" ordered the Inspector and then he quickly turned to the window. The glass broke and fell to the floor and a bullet shot into the ground floor office. It shattered a glass of water near the head of the wounded man.

They ran outside into the darkness. Hot sand flayed their faces and they were blinded by

the headlamps of a small motor car, drowned in thin fog. Doctor Doret just got a glimpse of a hefty man who had jumped from the window and now foolishly held the mudguard.

At the same instant Inspector Mario was firmly squeezing the neck of the mysterious sniper. He glared into the eyes of the man who owned in San Julio a pub and a bad reputation.

•

"Doctor! Is there any possibility of waking up this man? I want him to be completely conscious for five minutes!"

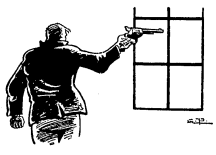
Doret examined the wounded man.

"He was struck unsconscious by a blow on the head, but it won't be very difficult to make him talk . . ." smiled the doctor.

"Then I will ask you another favour! Should he talk I'll ask you whether his injury is serious! You will answer that he will die before morning . . ."

•

"You say that you stopped in the pub of Francisco Savia because the tornado prevented you from driving further. Good! The weather outside is really shocking. I am sorry for you, sir, you have probably come a long way . . . How were you injured, don't you know anything about it?"



The first coherent thoughts passed through the head of the man lying on the iron bed. He recollected laboriously the events of the night. Yes, he wanted to warn Savia. Savia, who promised, but did not give! Savia, with whom he had quarelled and later on drank. Savia who had sent after him into the night Jorge and Carlos . . .

Inspector Mario did not let his train of thought reach this point.

"I shall not tire you, my friend . . ." he said softly. "You are mortally injured, you won't live much longer. But you know the man who robbed the Rio Prito ranch! You know Francisco Savia and you came to San Julio to blackmail him!" he attacked him.

"I don't know anyone! So help me God! I don't know anyone, senor!" moaned the man who had been detained by the nasty weather that day.

"Take my good advice and keep quiet! Every excitement brings your end nearer! How is he, Doctor Doret?"

"The crisis will come soon and the patient will die . . ." stated the doctor.

The man crumpled on the bed and began to pray aloud.

"Well, be sensible!" the Inspector repeated his good advice.

"You are a pious man, as I see, you turn to God. I call for justice! You will live several more hours. Save the life of an innocent man who has a wife and children and will be executed at four in the morning! Tell us the whole story and pass away in peace!" The dazed fellow weakened by drink and fear, asked for another cigarette.

Savia is the chief of the gang! We have known one another for ten years . . . I was the main witness against the Italian who was sentenced to death . . ." he whispered and Mario instructed the sergeant to take care of him.

"I shall explain everything to you, doctor, when there is time! And there is no time to spare, absolutely none! It is one a. m.! We have no telephone connection, no wireless and it is one hundred and sixty kilometres to the capital . . . You won the big race, yesterday! Do you want to win the race for the highest stake, a human life?"

"It is my vocation, I am a doctor!" Doret answered.

•

It is not usual for a Minister of Justice to be woken up at three thirty a. m. by two men who had covered hundred and sixty kilometres in a sand storm.

"The case is clear, I need your orders. Ring up the prison governor . . ." Mario said.

The Minister was thoughtful.

"He would fear mystification. I'll go with you!"

"We won't get there! It is too late!"

It is unusual for a Minister of Justice to drive through the capital in the night in a small, dusty motor car.

Antonio, a simple country fellow hardly grasped what was happening to him. Behind the big windows of the room with white tiles, he saw, as in a dream, the ranch where he had peacefully worked with his wife and children. It seemed to him, that they looked at him, asking why he was there.

The prison governor talked quietly with the District Attorney and then finaly told him everything.

"Today after midnight I was called from San Julio. The gale broke the wires and before I reached the telephone . . ."

"And why did it worry you?"

"The Rio Prito ranch is not far from this city. In five minutes an engineer will repair the lines. And that man, what if he is guiltless? We can punish a crime as easily as commit one . . ."

"This is no serious ground for doubts! Telephone?"

"Postpone execution of the sentence!"

"The law forbids that!"

The electrical engineer looked at his watch and stepped to the switchboard.

Antonio did not see anything, neither the faces of his wife and children, nor the small ranch.

•

In front of the police station on Constitution Square the brakes screeched. A man in a dressing gown jumped from the small car, shot through the door and straight to the desk of the chief.

"I am Minister Vargas! Call on my orders the Federal Prison. The execution of the Italian Antonio is to be postponed for ten minutes.

I will answer for this order to the parliament and the government!"

The chief recognised the Minister.

•

The District Attorney stood by the telephone according to regulations regarding the critical moments of an electrocution.

"Stand by! Wait ten minutes!" he ordered the engineer and shuddered. "Five minutes past four . . ." Eight minutes past . . ."

The engineer put his hand on the lever connected with Eternity. "Nine . . ."

In the corridor a door banged and a man in a dressing gown rushed into the room and crumpled at the electric chair, at the feet of the still Antonio.

•

Before noon on the same day, when Inspector Mario was returning with Doctor Doret to San Julio, he told him confidently: "That was your greatest record, dear friend, and tomorrow there will be in all the newspapers great praise for your small ŠKODA motor car. May be you will be decorated by the government. I thank you, as a man, for the life of another man . . ."

He thought for a moment and then added quickly: "Besides that, I promise you that won't be prosecuted any more for speeding . . ."

The two preceding numbers of this annual of the Czechoslovak Motor Revue were devoted to motor-cycles. This third issue deals with passenger cars and lorries and troleybuses of Czechoslovak make.

The contents of the articles is generally informative and therefore they are not concerned with details of technical and construction character.

We shall deal with the individual topics more in detail in one of the following numbers. In the meantime we shall gladly answer all concrete enquiries by a written reply.

The Editor.

•

Motor Revue, as a new magazine, after the publication of the first two numbers has entered into lively contact with the motor-cycling world. A great many letters, pictures and reports, which we got already from all over the world, testify to it.

It is a joyful co-operation whether it is a case of contacts with individual sportsmen, automobile cubs or Motokov representatives. The magazine was received with great enthusiasm, enjoys great popularity and certainly will be a good friend of all owners of motor vehicles of Czechoslovak make.

With the publication of this number we get in touch for the first time with atomobilists and friends of the ŠKODA and TATRA makes.

We trust that it will meet with the same favourable reception and that the owners of Czechoslovak passenger atomobiles as well as lorries will make use of our services in every respect.

The Editor.

•

To a preliminary enquiery addressed to some owners of the Czechoslovak ŠKODA and TATRA motors cars, we received a series of answers from which we quote some passages:

. . . I used my ŠKODA car daily for more than 4 years and covered approximately 80,000 miles (about 130,000 km). I should like to inform you that I am more than satisfied and that I prefer a general overhaul to the buying of a new car. During daily driving under the most varied weather conditions, on good as well as bad roads, the car serves to my entire satisfaction, not mentioning the extraordinary low consumption of fuel (approximately 40 miles per gallon).

René Holland, 5545 Queen Mary Road, Montreal, Canada.

I have a ŠKODA 1102 with engine No. 157911 since January 1952 and I would like to inform you that the car gives me great satisfaction. I have covered more than twice as many kilometres intended for such a car and under the most trying conditions. The costs of driving were so low that they are not worth mentioning. I think it is fair to acquaint the public with these experiences of mine.

Arne Ostnäs, Linnévägen 3 B, Nyköping 2, Sverige.

•

. . . in April 1948 we bought a ŠKODA delivery van from J .Gossem in Rotterdam, your representative. Since than the car has covered more than 185,000 km without repairs. It rendered to us outstanding service under the hardest conditions. It never failed us, not even once during that long time. We can say that it is the most reliable car under any conditions. Now we have acquired a pea green ŠKODA Sedan 1200 and trust it wil render us the same good service as the "old" car.

"ARTICO" Meeuwestraat 10c. Rotterdam, The Netherlands.

•

. . . and we send you a picture of our Monsieur Paul Macchi, who with the ŠKODA 1101 car took part in several races in Switzerland namely: In 1949 the Passwang moutain race, where he took second place. — Snow rallye, where he took the fourth place. — International race Les Rangiers, where he was third and Autoslalom Luzern where he won the third place. In 1951 he participated in the lake side race Rheineck-Walzenhausen where he was first and he also won the Rheineck-Walzenhausen National race as well as the Mitholz-Kandersteg national mountain race. These successes fully prove the excellent qualities of the ŠKODA car. This year in the Steckborn-Eichhölzli National Trial in the category of special touring cars he was first before Hoerschelmann (Lancia 1486) and Da Rin (VW 1131).

Royal Garage, Maihofstrasse 61, Luzern, Switzerland.

•

. . . and inform you that the Austrian Red Cross owns about 150 ŠKODA cars, models 1100, 1101, 1200. These cars comply with the requirements and excellently prove themselves. Performances over 100,000 km and even more than 200,000 km without considerable repairs of engine are a rule. Supplying of spare parts and the service to customers are very satisfactory, so that we can warmly recommend ŠKODA cars to everybody.

From a letter from Österreichische Gesellschaft vom Roten Kreuz to the firm of F. M. Tarbuk Co., Vienna I, Operaring 11, representing ŠKODA cars.

. . . in the mean time I got a ŠKODA 1200 car and can tell you that I was agreeably surprised. When I saw your leaflet I vas sceptical. But today I can asure you that my fears were on the whole unjustified and that facts only confirm what your leaflets modestly announce and recommend. In all things concerning motor cars I am very critical and petty but regarding the ŠKODA 1200 I can so far say: "Hats off to this type of car and its designers!"

Walter Baumeister, Calbe/Saale, Germany.

•

. . . Geneva autosalon enden last Sunday, March 20th 1955. I feel it my duty to thank you for the faultless execution and performance of the six wheel TATRA lorry. — Believe me that TATRA was outstnding among the many lorring of foreign make. Admiration was aroused not noly by the extraordinary design but also the perfect execution to the last detail. I had a feeling of inner satisfaction whenever I accepted the thanks of customers and experts. As I have represented for twenty years the TATRA cars, I feel it to be my duty to interpret these thanks to all those who share in the manufacture of this motor car.

Ferd. Schenk, Worblaufen - Bern, Switzerland.

•

The tenor of all received letters is very favourable. We should like, however, inasmuch as it is possible in the case of cars of Czechoslovak make, to see also the negative side. There may occur, sporadically perhaps, defects of operational character, which we can help to remove at least with good advice. We are looking forward to have the opportunity to include your contribution in one of the next numbers.

•

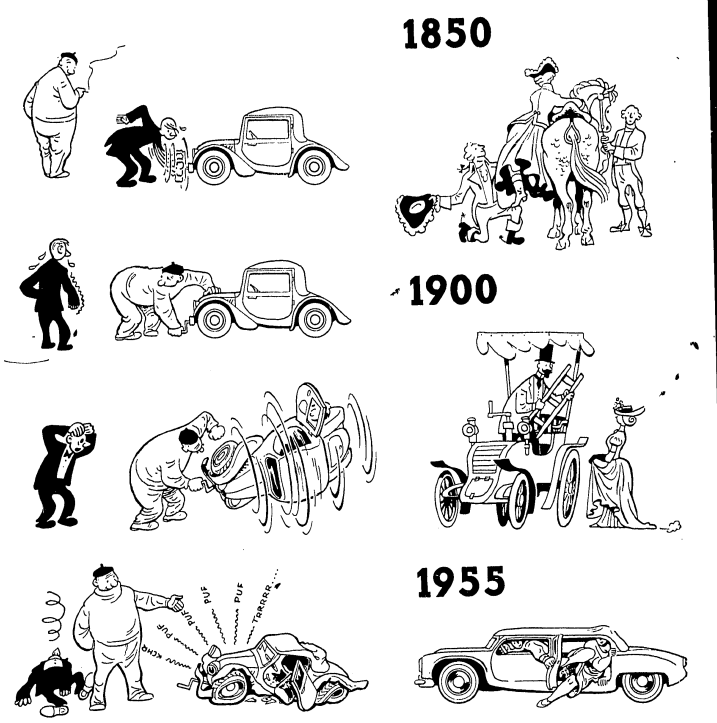
In order to appreciate the dexterity and care devoted to the running of motor cars, the owners and drivers of Czechoslovak passenger cars and lorries of the ŠKODA and TATRA make will be rewarded with silver and gilded badges and plaques for vehicles.

According to preliminary information we understand that

a silver badge and vehicle plaque will be awarded to drivers who have covered more than 100,000 km,

gold badge and vehicle plaque will be awarded to drivers who have covered more than 250,000 km,

Regarding the procedure of transmitting badges and vehicle plaques you will be informed by the sales agents in your cuntry. It stands to reason that we too, will give in good time detailed information.



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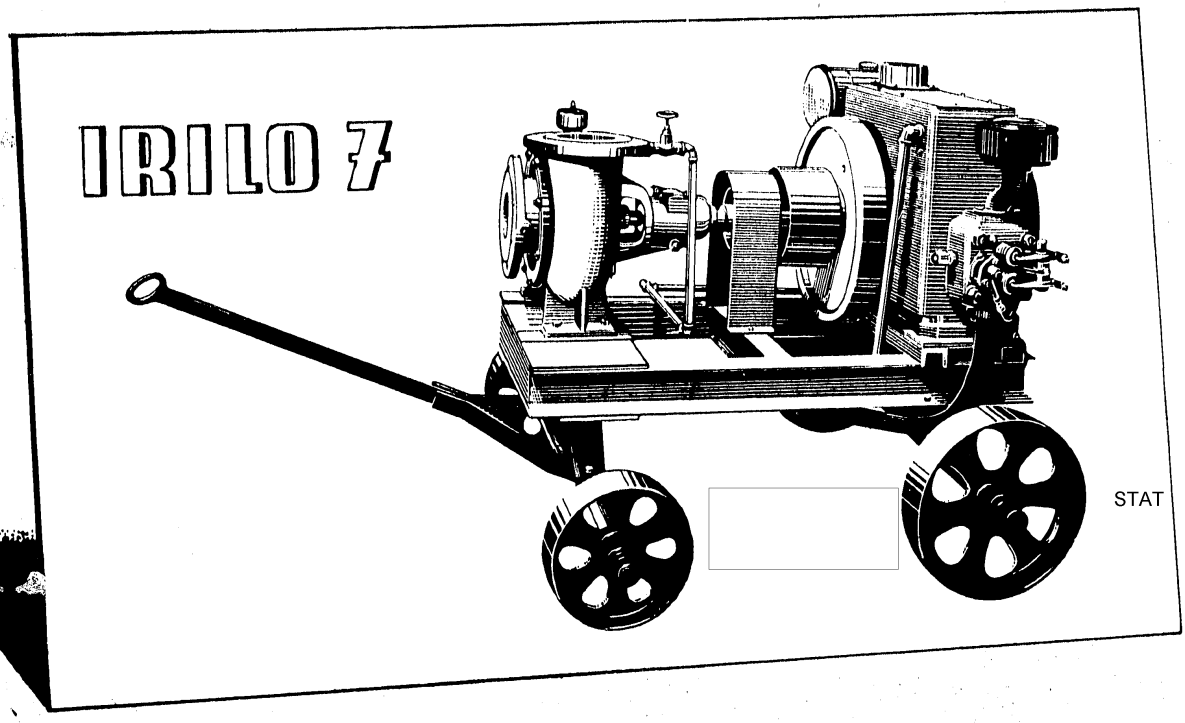


IRRIGATION PUMPING UNITS

GENERAL:

IRILO pumping sets are transportable units for use primarily in connection with irrigation. They are intended for heavy duty and can be used for flood irrigation. They can, of course, also be utilized for general water supply projects and other functions connected with the pumping of water. The pump and engine are directly coupled by means of a clutch and mounted on a four wheel trailer. The Diesel motor can be easily uncoupled from the pump by means of a clutch and used as a drive for other farm equipment. Technical data together with the main dimensions are given on the reverse side of this leaflet.

ENGINE:

The IRILO 7 set is driven by a high-speed 4-stroke Diesel engine, of modern horizontal design. All the working parts are completely enclosed, and are thus protected from dust and dirt. All parts are well lubricated. The engine is water-cooled by means of an evaporator and especially for tropical areas, by through pass-cooling.

PUMP:

The pumps are of special design and are in the first instance intended for irrigation purposes. According to the required output of water to be pumped, the IRILO 7 irrigation sets are fitted with 5" or 6" Delta pumps series.

TYPE NG:

a spiral-casing centrifugal pump, the impeller having wide channels for large capacity of flow. This type can be used for flood irrigation.

TYPE NZ:

a spiral-casing centrifugal pump, the impeller having wide channels for pumping impure, muddy water and sludge. The capacity of flow provided by this type of pump is very great. The impeller cannot easily be clogged, but if this should occur, the pump-body can be quickly and easily dismantled and cleaned (see cut). This type can be used for flood irrigation.

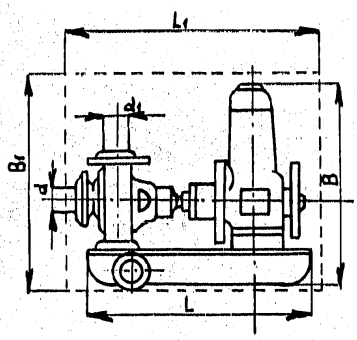
TYPE HL:

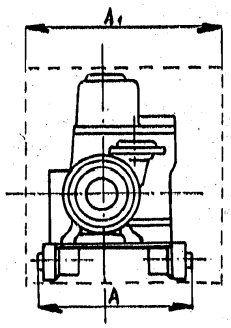
a spiral-casing centrifugal pump, with two back to back impellers, for high delivery heads. This type can be used for overhead irrigation.

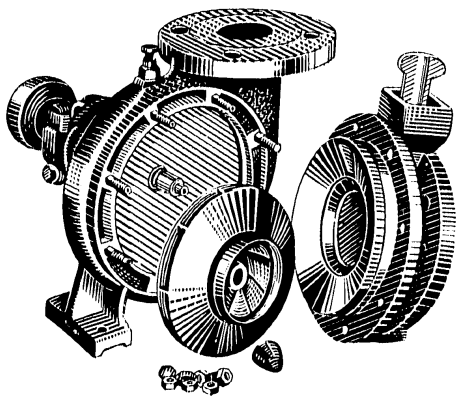
Main dimensions and table of outputs of IRILO Pumping Units:

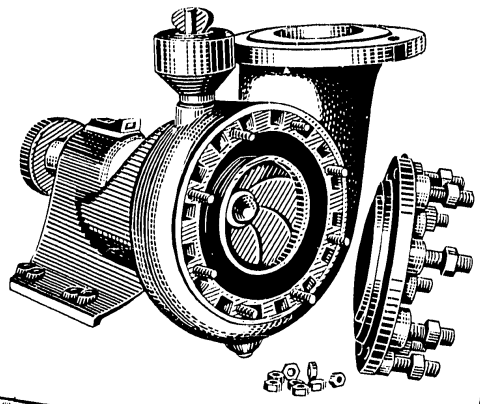
All dimensions shown in this leaflet are approximate only. We also supply other types of irrigation sets, and are always ready to solve any irrigation problem.

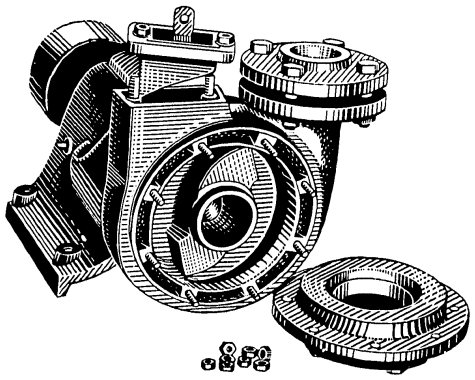
SIGMA PUMPS

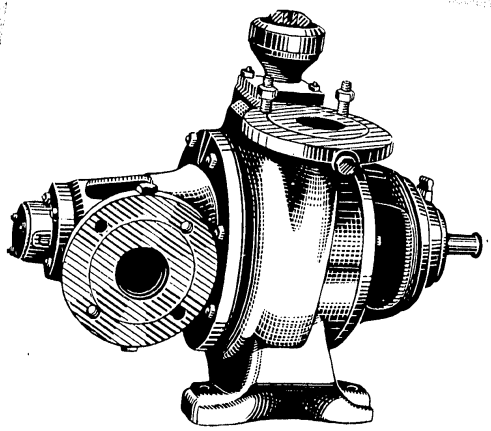












TYPE IRILO - 7

ENGINE	HP RpM	7 1300				
PUMP	Type	NG-4	Delta 5a	HL-5	NZ 5a	Delta 5
	Q l/min. IMP. GAL./min. TOT. DEL. m HEAD ft. RpM	3000 660 6 20 1300	2000 440 11 36 1300	600 132 30 98 1300	2000 440 10 33 1300	3400 755 3 10 1300
FLANGES	Suction/mm Suction/ins. Disch./mm Disch./ins.	125 5″ 125 5″	125 5″ 125 5″	80 3″ 80 3″	100 4″ 100 4″	150 6″ 150 6″
OVERALL DIM. OF SET	L/mm L/ins. A/mm A/ins. B/mm B/ins.	1555 61.0 850 33.5 750 29.5	1400 55.0 850 33,5 750 29,5	1400 55.0 850 33.5 750 29.5	1600 63.0 850 33.5 750 29.5	1400 55.0 850 33.5 750 29.5
WEIGHT	NETT/kg NETT/lbs GROSS/kg GROSS/lbs	390 860 540 1200	365 805 520 1150	450 990 620 1370	450 990 620 1370	347 790 520 1150
PACKING	L_1/mm L_1/ins. A_1/mm A_1/ins. B_1/mm B_1/ins.	1700 64.5 1000 39.5 800 31.5	1550 61.0 1000 39.5 800 31.5	1550 61.0 1000 39.5 800 31.5	1750 69.0 1000 39.5 800 31.5	1550 61.0 1000 39.5 800 31.5
SHIPPING DIMEN-SIONS	CUBIC/m OCEAN TONS	1.2 1.06	1.08 0,95	1.08 0.95	1.2 1.06	1.08 0.95

STROJEXPORT

PRAHA - CZECHOSLOVAKIA

ČOK 52533a - 5410 · Set 04 1199

Printed in Czechoslovakia

STROJEXPORT, PRAGUE
CZECHOSLOVAKIA

SIGMA IRRIGATION PUMPING SETS

(Direct Flexible Coupling)

Pumping Set	Pump Specifications				Engine Specifications			Execution No.	Approx Packing Dimensions mms-inches			Approx Weights kg-lbs		Code	Price	
	Type	Q Lit./Min. I.G.P.M	H Meters Feet	Speed R.P.M.	Type	Output HP	Speed R.P.M.		Lenght	Width	Height	Nett	Gross		Pumping Set	Extra for Standard Accessories
IRIPA - 9	NG - 4 5" x 5"	1500 - 3000 330 - 660	12 - 9 40 - 30	1500	SLAVIA DIESEL 1S 100	9	1500	1	1970 78	1400 55	1190 47	695 1540	940 2075	UTIKA		
								3	1620 63	1165 46	710 28	475 1045	615 1350	UTILK		
IRIPA - 9 Self-priming	UZA - 245/40 4" x 4"	1500 330	16 53	1500	SLAVIA DIESEL 1S 100	9	1500	4	1560 61	1340 53	1120 44	535 1180	680 1495	UTJED		
								5	1560 61	1340 53	1120 44	540 1190	685 1505	UTJOX		
IRIPA - 12	IRI - NZ - 8" 8" x 8"	2500 - 4500 550 - 990	9 - 6 30 - 20	700	SLAVIA DIESEL D - 12	12	700	1	1795 71	1805 72	1190 47	1120 2460	1350 2990	UTIPI		
								3	1830 72	1575 62	935 37	915 2015	1120 2460	UTIRM		
IRIPA - 27	D - 250 10" x 10"	8000 - 10000 1760 - 2200	7 - 6 23 - 20	1500	SLAVIA DIESEL DR - 27	27	1500	3	1840 72	1460 58	1000 40	870 1915	1100 2420	UTIUG		
IRISKO - 15	D - 200 8" x 8"	4000 - 6000 880 - 1320	10 - 7 33 - 23	1500	SKODA DIESEL 1S 110	15	1500	3	1670 66	1500 59	910 36	790 1740	980 2160	UTIVY		
IRISKO - 30	ND - 5a 8" x 8"	3000 - 6500 660 - 1430	19 - 12 62 - 40	1500	SKODA DIESEL 2S 110	30	1500	3	1795 71	1955 77	950 38	960 2120	1200 2640	UTJAC		

Standard Accessories (for each set)

Suction Side : 1 Foot valve with strainer of suitable diameter with swing bolts (Suction strainer only for **IRIPA** - 9 Self-priming Set)
6 Meters rubber hose _____" _____ with couplings
1 Connecting Piece _____" _____
Discharge Side : 1 Sluice valve _____" _____ with flanges (with exeption of **IRIPA** - 9 Self-priming Set)
1 Bend 90° _____" _____

Notes

Q = Capacity of pump
H = Total manometric delivery head incl. suction lift of approx. 4 - 7 meters (13 - 23 f) and friction loss in the pipe line.
Diesel Engines are directly cooled by circulating water from the main pump. Only the Self-priming Set IRIPA - 9 is equipped with radiator cooler.
Sigma Irrigation Pumps are supplied in 5 different executions : No. 1 - on 4-wheel trailers, No. 2 - on skeages, No 3 - on bed-plates of welded channel iron construction, No. 4 - on 2-wheel trailers with rubber lined wheels, No. 5 - on wheel trailers with tyres.

Offers for Sigma Irrigation Pumping. Sets of other characteristics or executions upon request.

Each Pumping Set is ready for immediate use when delivered.

550840

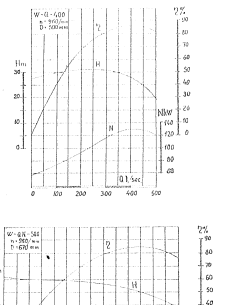
STROJEXPORT, PRAGUE
CZECHOSLOVAKIA

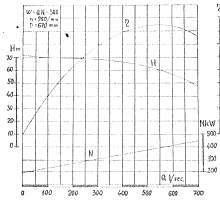
SIGMA IRRIGATION PUMPING SETS
(V-Belt Drive)

Pumping Set	Pump Specifications				Engine Specifications			Execution No.	Approx Packing Dimensions mms-inches			Approx Weights kg-lbs		Code	Price	
	Type	Q Lit./Min. I.G.P.M.	H Meters Feet	Speed R.P.M.	Type	Output HP	Speed R.P.M		Lenght	Width	Height	Nett	Gross		Pumping Set	Extra for standard Accessories
IRIPA-5	NG-3a 4" x 4"	600-1000 132-220	16-13 53-43	2200	SLAVIA DIESEL D-5	5	900	1	1650 65	1560 62	1200 47	630 1385	870 1915	UTFYT		
								2	1640 64	1370 54	860 34	430 945	630 1385	UTGEI		
	NG-3 4" x 4"	1000-2000 220-440	10-6 33-20	1800				1	1650 65	1560 62	1200 47	650 1430	890 1960	UTGLA		
								2	1640 64	1370 54	860 34	455 1000	655 1440	UTGOK		
IRIPA-8	NG-4a 4" x 4"	1000-2000 220-440	16-10 53-33	2000	SLAVIA DIESEL D-8	8	800	1	1650 65	1640 64	1200 47	775 1700	1040 2290	UTGUF		
								2	1640 64	1400 55	910 36	580 1275	660 1450	UTHAD		
	NG-4 5" x 5"	500-3000 330-660	0-7 33-23	1400				1	1650 65	1640 64	1200 47	790 1740	1055 2310	UTHEZ		
								2	1640 64	1400 55	910 36	595 1310	675 1485	UTHIN		
IRIPA-12	NN-5a 5" x 5"	1500-3500 330-770	15-10 49-33	1400	SLAVIA DIESEL D-12	12	700	1	1850 73	1980 78	1650 65	1170 2570	1520 3340	UTHUT		
								3	1820 72	1620 63	1060 42	780 1715	1000 2200	UTHYK		
	NG-5a 6" x 6"	2000-4000 440-880	10-8 33-26	1200				1	1850 73	1980 78	1650 65	1200 2640	1550 3410	UTIAF		
								3	1820 72	1620 63	1060 42	780 1715	1000 2200	UTICU		
IRIPA-15	ND-5a 8" x 8"	2000-5000 440-1100	12-9 40-30	1200	SLAVIA DIESEL D-15	15	650	1	1850 73	2000 79	1650 65	1365 3000	1700 3740	UTIEB		
								3	1820 72	1850 73	1110 44	970 2140	1220 2680	UTIFE		

Each Pumping Set is ready for immediate use when delivered.

Type	I. D. of Branches		Capacity Q			Manometric delivery head Htm		Speed r. p. m. (n)	Input on pump shaft N kW	Input on guide tube shafts kW	Diameter of impeller (D) mm ion.	Optimum efficiency	
	suction mm ins.	delivery mm ins.	cu metres per hour	litres per sec.	galls per sec.	metres	feet					η %/Q litres per sec.	Q galls per sec.
W-Q-400	500 20	400 16	720 to 1800	200 to 500	44 to 110	31 to 20	102 to 66	960	92 to 122	2.2	500 19⁶¹/₆₄"	86/430/93	
W-QN-500	650 26	500 20	1080 to 2520	300 to 700	66 to 155	67 to 47	220 to 154	960	290 to 430	3	670 26 ³⁹/₆₄"	86/330/121	





Symbols used in the table and characteristic curves:

Q = quantity of liquid delivered, litres per sec.
H = manometric delivery head, metres of water column
N = input on pump shaft, kW (at specific gravity = 1)
η = efficiency of pump, %
n = speed of pump shaft, r. p. m.
D = maximum diameter of impeller, mm

The input on the shaft of the pump proper in kW can be calculated from the above figures by means of the formula

$$N_kW = \frac{Q \cdot \gamma \cdot H}{102 \cdot \eta}$$ where γ = specific gravity of liquid

The input of the whole set is obtained by adding to the input of the pump proper the input of the guide tube shafts. The output of the electric motor is selected with a margin of 15 to 20 % of the input of the whole set.

The figures given in the table and in the characteristic curves refer to the pumps operating with pure water (γ = 1), at the rated speed (n) and with the full diameter of the impeller (D). The pumps can, if required, operate at a lower speed (n_1) and with a reduced diameter of the impeller (D_1), i. e. with the impeller turned down at its outside diameter. The original figures Q and H stated in the table and characteristic curves are then reduced to the figures Q_1 and H_1 as follows:

a) with change of speed

$$Q_1 = Q \cdot \frac{n_1}{n}$$

$$H_1 = H \cdot \left(\frac{n_1}{n}\right)^2$$

If η remains unchanged

$$N_1 = N \cdot \left(\frac{n_1}{n}\right)^3$$

b) with change of impeller diameter

$$Q_1 = Q \cdot \frac{D_1}{D}$$

$$H_1 = H \cdot \left(\frac{D_1}{D}\right)^2$$

If η remains unchanged

$$N_1 = N \cdot \left(\frac{D_1}{D}\right)^3$$

The impeller can be reduced in diameter up to 15 % of its full (maximum) diameter as stated in the table and characteristic curves.

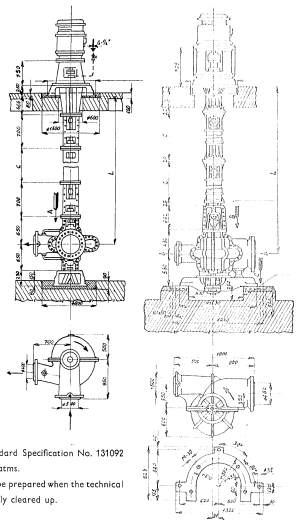
Explanation of Symbols:

L = total structural length of pump which is defined as the distance between the seating surface of the top bearing housing and the centre-line of the suction branch. It may be up to 10 metres for either pump.

C = section of guide tube. The usual maximum lengths of the sections of the guide tube are:
with the type W-Q-400 pump 2530 mm
with the type W-QN-500 pump 2980 mm
These lengths can, however, be modified (reduced) in order to obtain the total required structural length L.

The other dimensions shown in the drawing cannot be changed. They are given in mm. The foundation frame of the type W-QN-500 pump intended for embedding in the foundation for the pump and guide tube to rest on is supplied with the pump. The connecting dimensions of the flanges correspond to ČSN Standard Specification No. 131092 for 10 atms or No. 131091 for 6 atms.

A binding dimension drawing will be prepared when the technical particulars of the order are finally cleared up.



STROJEXPORT PRAHA-CZECHOSLOVAKIA

ČOK 32568 a - 5411

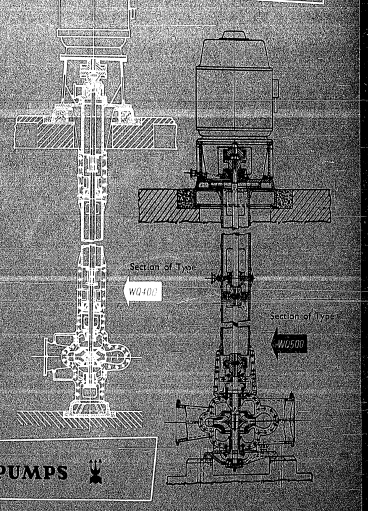
Printed in Czechoslovakia

LARGE VERTICAL SPIRAL CASING CENTRIFUGAL PUMPS SIGMA TYPE

WQ

The SIGMA Type W-Q vertical pumps are designed as single stage centrifugal pumps with an extended mechanical part which reaches, as a rule, to the ceiling of the pump pit on which the driving motor is erected. This arrangement of the set affords a considerable saving in building space in view of the high capacities of the type W-Q pumps and the resulting large dimensions.

The pumps are intended for operation in dry pits as water supply pumps handling pure water, without hard mechanical admixtures, up to a maximum temperature of 80° C (176° F) and a maximum acidity of 5.8 pH. They are built up to a total structural length, defined as the distance between the seating surface of the top bearing housing and the centre-line of the suction branch, of 10 metres (33 ft).



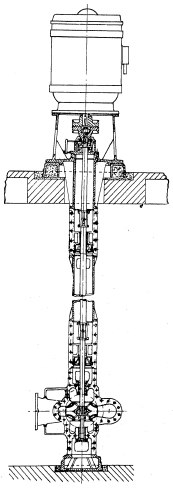
SIGMA PUMPS

Design

The complete SIGMA Type W-Q vertical spiral casing centrifugal pump consists of the hydraulic part (the pump proper) and the mechanical part, i. e. the guide tube with the shaft and bearings, the top bearing housing and the flange mounted electric motor. The power is transmitted from the flange mounted electric motor fitted on top of the bearing housing to the shaft of the pump proper by means of a flexible coupling and a connecting shaft.

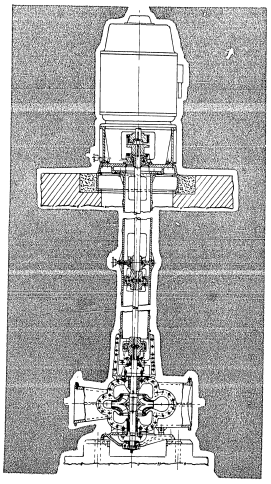
Hydraulic Part: A) TYPE W-Q-400 PUMP

The pump proper is formed by the spiral casing which is divided axially with the two halves bolted together on the entire circumference. A frame supporting the pump and the guide tube on the foundation is bolted to the bottom of the casing.
The rotor of the pump consists of the shaft, which is extended up to the first guide bearing in the guide tube, and the double entry impeller. The impeller runs on both sides in exchangeable packing rings fitted in the two halves of the spiral casing. The impeller is keyed to the shaft and secured by means of a nut.
The shaft is mounted in the hydraulic part (pump) in bearings lined with bearing metal. The lower bearing is lubricated with the water being pumped. It is sealed to stop air from being drawn in and lubricating water from dripping from it.
The upper bearing also serves as a bearing of the guide tube and is lubricated with oil which is thrown by an oil thrower ring by centrifugal force to the upper edge of the bearing. The shaft also passes, below the upper bearing, through a gland with a water seal arranged in the spiral casing and connected to the delivery branch.



B) TYPE W-QN-500 PUMP

The pump proper is formed by the spiral casing which is divided axially with the two halves bolted together on the entire circumference. To the upper part is attached a connecting piece, also axially divided, with a built-in anti-friction bearing for the shaft. The lower part of the spiral casing is provided with a bed plate for the designed pump and at the same time as a bearing housing in which another anti-friction bearing of the shaft is fitted.
The rotor of the pump consists of the shaft which is protected in the hydraulic part by bushes, and the double entry impeller. The impeller runs on both sides in exchangeable packing rings fitted into the spiral casing. It is fitted to the shaft by means of a long key and secured by bushes and a nut.
The shaft is mounted in the hydraulic part in grease lubricated ball bearings at both ends. The upper bearing in the connecting piece is fitted with a grease thrower ring for removing the excess grease from the inner space of the bearing; the lower bearing is protected by a large thrower ring which forms a roof above the bearing from which water can leak out of and drip off the housing. The shaft passes at both sides of the spiral casing through glands with water seals connected to the delivery branch.
The weight of the rotor of either pump is born by the thrust bearing in the top bearing housing.



Guide Tube

The driving shaft, which is built up of sections, passes through the guide tube by means of which the pump proper is connected to the top bearing housing. The guide tube consists of centered flanged tubular sections. Between the sections of the guide tube guide bearings are fitted in which the driving shaft is mounted.
In the case of the type W-Q-400 pump the long bodies of the guide bearings are divided axially and bolted together at their circumference. The bearings are plain ones with white metal lined shells. They are lubricated with oil from an oil container. The oil is driven by an oil thrower ring against the upper edge of the bearing. The oil level can be checked by means of a sight glass in the body of each bearing. The shafts of the individual sections are mutually coupled by means of sleeve type couplings.
In the case of the type W-QN-500 pump, ball bearings are arranged between the individual sections of the guide tube. They are fitted in short bearing bodies and lubricated individually with grease. The sections of the shaft in the guide tube are mutually coupled by means of flexible couplings which are keyed to them.

Top Bearing Housing

The top bearing housing of the vertical pump forms, together with the bed plate, the carrier of the driving part of the set. The top bearing housing of the type W-Q-400 pump contains two ball bearings fitted in a suspension unit with a cooling jacket for cooling with pure water supplied to it, and with a sight glass for checking the oil level. The bearings are lubricated with oil driven to the upper bearing by means of an oil thrower ring by centrifugal force.
The top bearing housing of the type W-Q-500 pump contains one sturdy taper roller bearing independently lubricated with grease. The thrower ring above the bearing removes excess grease from the inner space of the bearing. The driving shaft of the pump is directly coupled with the shaft of the flange mounted electric motor by means of a flexible coupling.

Drive and Direction of Rotation

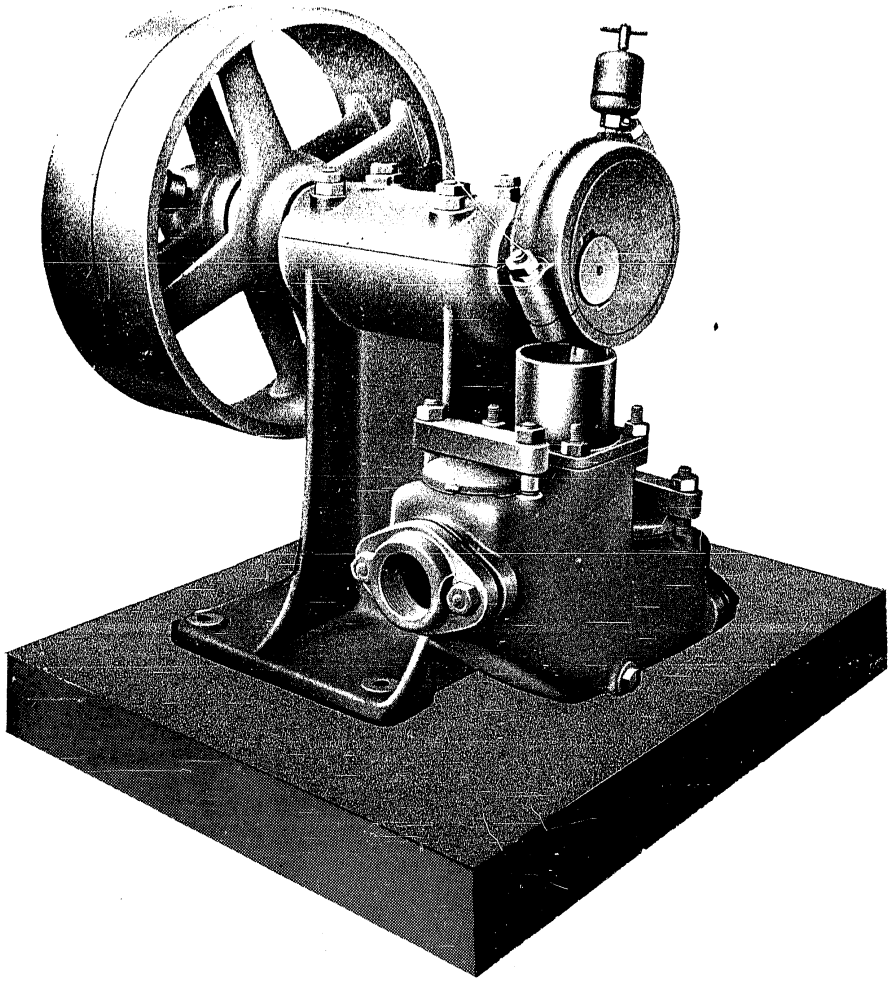
The SIGMA Type W-Q pumps are driven by a directly coupled vertical flange mounted electric motor, the shaft of which carries one half of the coupling.
The direction of rotation of the type W-Q-400 pump is clockwise, the direction of rotation of the type W-QN-500 pump counter-clockwise when viewed from above, from the driving motor.

Material of Standard Design

The shaft is made of steel 11.500. The spiral casing, bed plates, impellers, guide bushes, guide bearing bodies, guide tubes and top bearing housings are made of cast iron Ge-14.91 or Ge-18.91. The packing rings are made of bronze. The bearings of the type W-Q-400 pumps are lined with bearing metal. The packing material corresponds to the liquid being handled.
A foundation frame for fitting under the bed plate, which should be embedded into the foundation for the pump to rest on, is supplied together with the type W-QN-500 pump.

MACHINE PLUNGER PUMPS "EP"

type



CONSTRUCTION:

The pump, type "EP", is a single cylinder vertical plunger pump. It is characterised by its simple construction, the main advantage of which is the separate arrangement of the working cylinder and the valves.

In the solid cast iron working cylinder the plunger of bronze moves in an easily accessible stuffing box with a deep packing space. The plunger is driven

by a connecting rod fitted on a strong eccenter lubricated by a grease-lubricator or by a sight-feed lubricator. The steel shaft of the eccenter is guided in a long bronze bearing with two lubricating rings.
The bearing is located in a cast iron stand which carries also the hydraulic part of the pump. The other end of the shaft carries either a fast pulley (type of drive "R") or a fast and loose pulley (type of drive "RR"). For electric motor drive, and on special demand, V-belt or gear-wheel drive may be supplied. Both the suction and discharge valves are arranged separately in valve chambers. They are easily accessible by loosening two bolts.

USE:

Plunger pumps type "EP" are preferably used for small outputs and greater pressures. The pumps are of very solid construction and therefore suitable for heavy continuous running, especially under conditions where reliability and durability of the machine are required.
For chemically active liquids the hydraulic part of the pump is made of resistant materials, such as bronze, stainless steel, etc.
Suction and discharge piping over 10 m in length requires a suction or pressure air chamber. For high pressures, air chambers are also recommended.

TECHNICAL DATA AND SIZES:

TYPE (Dia. of cylinder and length of stroke in mms)			50/50	70/70	90/90	110/110
Dia. of branches		inches	1	1 1/2	2	2 1/2
Revolutions per minute (R. P. M.)			110	100	90	80
Volumetric capacity		Lit./min.	10,8	27	51	83
		Imp. G.P.M.	2,4	6	11,3	18,3
Maximum delivery head		metres	100	100	60	60
		feet	330	330	200	200
Theoretical consumption for H = 10 m (33 feet) HP			0,06	0,14	0,92	0,31
Dia. and width of pulley		mms	300/60	350/70	450/85	600/100
		inches	12–2 3/4	13 3/4–2 3/4	17 3/4–3 3/4	23 3/4–4
Weights and overall dimensions (Type of drive "RR")	Length	mms	400	460	595	620
		inches	15 3/4	18 1/4	20 3/4	24 1/2
	Width	mms	300	350	450	600
		inches	12	13 3/4	17 3/4	23 3/4
	Height	mms	450	510	635	780
		inches	17 3/4	20 1/8	25	30 3/4
	Nett weight (approx.)	kgs	45	65	100	150
		lbs	99	143	220	330
Code-Word			ZALOU	ZALTY	ZALUZ	ZALVA

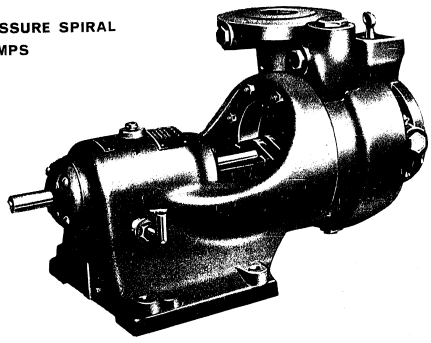
SIGMA PUMPS

NATIONAL CORPORATION OLOMOUC CZECHOSLOVAKIA

341-01/A

C/4811 - 637

TWO STAGE, MEDIUM PRESSURE SPIRAL CASING CENTRIFUGAL PUMPS SERIES



Types: HA 2a, HA 3a and HL 3

Diameter of Branches:	Capacity:	Delivery Head:
50 mm	50 – 400 litres per minute	4 – 50 metres
2 inches	10 – 80 Imp. G. P. M.	10 – 150 ft

CONSTRUCTION

The two stage spiral casing centrifugal pumps series "H" consist of a hydraulic and a mechanical part (bearing support). The bearing support ensures perfect guiding of the shaft, and also serves to support the complete unit. The shaft is guided in two ball bearings, or in ring oil-lubricated bearings. The body of the bearing support is an oil-bath to lubricate the bearings. The oil-bath is completely sealed by the bearing covers, thus preventing any penetration of impurities.
On the power end of the shaft a flexible coupling or pulley can be fitted, whereas on the pump end of the shaft, two single-entry impellers are mounted back to back, connected by a diffuser. This arrangement of the impellers ensures complete neutralisation of the axial thrust of the rotor. Both impellers are keyed to the shaft and secured by a nut. The stuffing box, with a deep packing space, and equipped with a flushing ring, obtains pressure water from the first impeller so that priming of air through the stuffing box, even at high suction head, is impossible. Owing to the excellent design of the bearing support, the stuffing box is freely accessible. The suction branch is always axial, the delivery branch is normally vertical.

DIRECTION OF ROTATION

Clockwise, as seen from the driving side.

PUMP DRIVES

See separate leaflet showing the various types of drives.

MATERIALS OF STANDARD DESIGN

The spiral casing, suction cover and bearing support are of close-grain cast iron. The impeller nut, distance bush and shaft nut are of bronze. The replaceable neck rings (supplied with larger types of "H" pumps), are also of bronze. The shaft is of high quality steel. The impellers are normally of high-grade cast iron.

MATERIALS OF SPECIAL DESIGNS

For pumps constructed of special materials, such as bronze, stainless steel, etc., see separate leaflet for special pumps.

SIGMA PUMPS

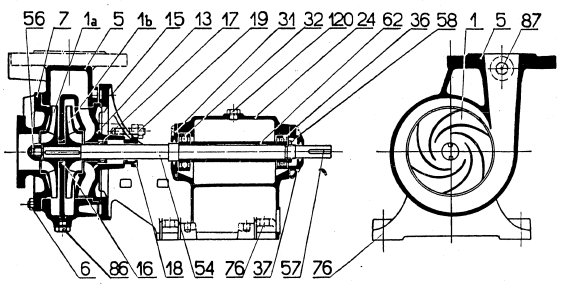
EQUIPMENT

The "H" series of pumps are equipped with the following: Oil filling and draining equipment for bearings; priming-funnel; oil indicator; initial packing of stuffing box and water draining and evacuation device. The pressure and vacuum gauge connections are closed by plugs, unless these gaugesare specifically ordered. Units supplied with common base-plates are provided with foundation bolts. Pumps with branches up to 65 mm diameter (2½ ins.) are supplied with counter flanges, studs and gaskets.

USES

The series "H" pumps, are designed to handle clean and slightly impure water. The wide range of sizes enables the selection of the right pump, with the correct output and pressure, for every possible application.

CROSS SECTION OF H SERIES PUMPS, TYPES: HA 2a, HA 3a, AND HL—3:



COMPONENT PARTS

No	Component	No	Component
1a	Impeller, right hand	31	Bearing cover
1b	Impeller, left hand	32	Ball bearing, pump end of shaft
5	Spiral pump casing	36	Ball bearing, power end of shaft
6	Securing screws, suction cover	37	Bearing cover
7	Suction cover with flange	54	Shaft
13	Stuffing box casing	56	Impeller nut
15	Securing screws, bearing support	57	Coupling or pulley key
16	Casing bush	58	Ball bearing nut
17	Flushing ring	62	Distance bushing
18	Gland	76	Securing screws, bearing body
19	Stuffing box screws	86	Draining plug
24	Bearing support	87	Pressure gauge connection
		120	Oil-filling plug

STROJEXPORT PRAHA - CZECHOSLOVAKIA

ČOK 52197 a - 5111 - SR 04 - 1219

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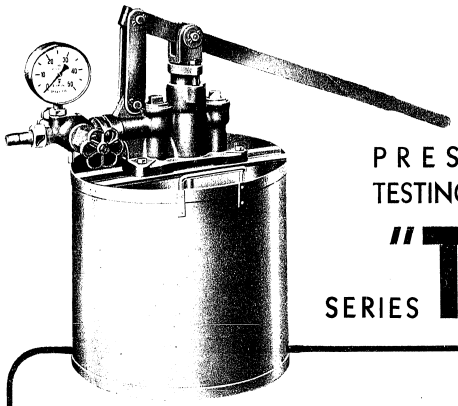


PRESSURE TESTING PUMPS "TP" SERIES

PUMPS UP TO 100 atm. (1400 lbs./sq. in.)

SIZE			90	50	100
Working pressure	atm.		90	50	100
	lbs./sq. in.		985	100	1400
Dia. of plunger	mms		40	35	33
	inches		1,575	1,38	1,30
Overall dimensions	Length	mms	1010	1210	1315
		feet	3' 3¾"	3' 11⅝"	4' 4"
	Width	mms	590		
		feet	1' 8 1/2"		
	Height	mms	780		
		feet	2' 6 ⅞"		
Nett weight (approx) with tank	kgs		38		
	lbs		84		
Tank weight			17 kgs (38 lbs)		
Code-word			ZALYD	ZALZE	ZAMAH

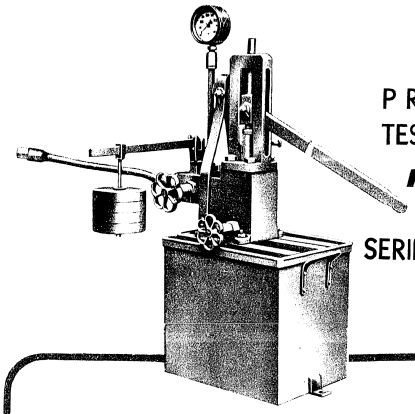
These pumps consist of a stout cast iron casing and of precisely ground valves of hard phosphor - bronze, which are easily accessible. The long plunger of bronze is securely sealed by a high pressure bronze stuffing box.

For draining the discharge piping, the pump is provided with a high-pressure bronze closing valve. The screwed connection of ¾" diam. is supplied for pressures up to 50 atm. (700 lbs/sq. in.) for lead piping, and over 50 atm. for steel piping.

The solid and riveted tank of 50 litres (11 Imp. Galls.) capacity is protected by rust-proof paint. The pump may be also supplied without the tank. To ensure complete supervision of the tests, the pump is fitted with a pressure gauge.

SIGMA PUMPS

NATIONAL CORPORATION OLOMOUC CZECHOSLOVAKIA



PRESSURE TESTING PUMPS "TP" SERIES

PUMPS UP TO 1000 atm. (14000 lbs./sq. in.)

SIZE			950	400	600	1000
Working pressure		atm.	950	400	600	1000
		lbs./sq. in.	3500	5700	8500	14000
Dia. of low pressure plunger		mms	40			
		inches	1,575			
Dia. of high pressure plunger		mms	20	15	12	10
		inches	0,79	0,59	0,47	0,40
Overall dimensions	Length	mms	9185			
		feet	7' 9"			
	Width	mms	650			
		feet	2' 1 13/16"			
	Height	mms	1145			
		feet	3' 9"			
Nett weight (approx) with tank		kgs	167			
		lbs	368			
Tank weight			97 kgs (60 lbs)			
Code-word			ZAMBI	ZAMEL	ZAMHO	ZAMIP

These pump are of specially strong construction for testing at high pressures.

The pump is fitted with a robust steel body, a low pressure filling plunger of bronze, a high pressure plunger of stainless steel, with special packing rings and with precisely ground valves.

Further, the pump is provided with a safety valve, pressure gauge and two closing valves for draining the discharge pipe and the body of the pump.

SIGMA PUMPS

NATIONAL CORPORATION OLOMOUC CZECHOSLOVAKIA

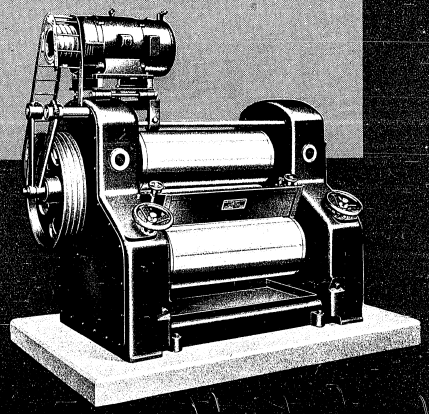
151-01/A

C/4811 - 637

KA 50/60

HIGH SPEED

THREE-ROLLER MILLS



STROJEXPORT

PRAHA - CZECHOSLOVAKIA

HIGH SPEED

TYPE KA 50/60

Three-Roller Mills are suitable for refining all kinds of paints and laquers especially in pasty form, such as oil and varnish colours, printing inks, caoutchouc varnishes and similar pasty colours. They are likewise advantageous for refining other pasty masses, such as chocolate, almond, cheese, graphite as well as boot-polishes, tooth pastes, etc.

CONSTRUCTION

Our mills combine the latest features in design and manufacturing methods. The precise yet sturdy construction of these machines ensures the maximum in efficiency, performance and quality of the material treated. The carefully milled gear-wheels are enclosed in the frame. The driving motor is placed on the top of the left-hand frame, thus offering substantial savings in space.

ROLLERS

The vertically arranged rollers give, when properly adjusted, the maximum productive capacity at the desired fineness of grind. They are made of chilled steel hardened to a high degree. The surface of the rollers is precisely ground. The shafts are safely joined with the roller shells. Each machine is equipped with shear pins preventing damage to the rollers due to penetration of hard foreign objects. Individual valves control the water flow, making it possible to regulate the temperature of each roller.
For special duties the machines are available with porphyry rollers. Stones with a uniform grain structure are chosen for this purpose.

ADJUSTMENT

All rollers run in self-aligning double anti-friction bearings. The middle roller is fixed, the other two rollers are adjustable by hand wheels. The space between the rollers does not change even when very solid substances are being processed.

LUBRICATION

The gear-wheels of the KA 50 model are lubricated from oil baths housed in the bottom part of the frame, while in the KA 60 model they are lubricated by a pump. The bearings are lubricated by grease nipples.

HOPPER AND COLLECTING DEVICE

The hopper consists of two easily adjustable side plates and a front sheet steel plate. The collecting channel is also made of sheet steel. The scraper blades are made of the finest quality steel, have a long life and can easily be replaced.

In view of the fact that our products are being steadily improved all data contained in this prospectus are not binding. Binding data on request.

CPA 400

TYPE CPA 400 HYDRAULIC SCRAP PACKING PRESS

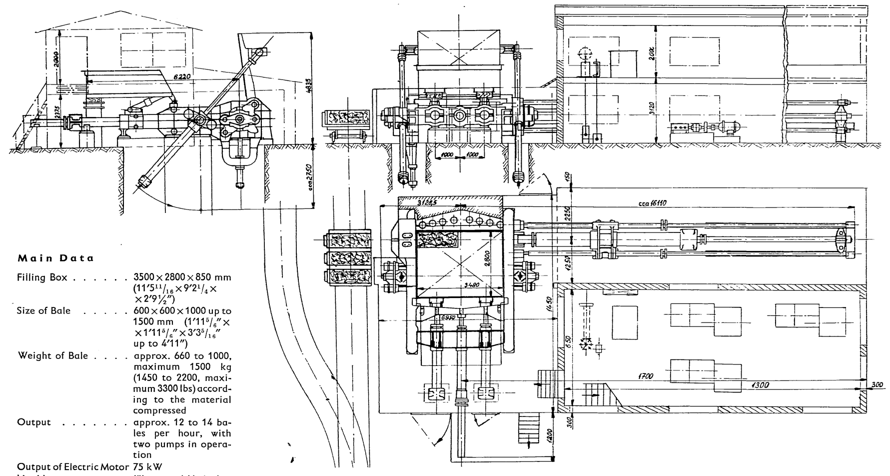
The press is used in heavy engineering plants for packing metal scrap into bales to make them ready for storage, transportation, charging into furnaces, etc.

Description

The press consists of the following parts: hopper, filling box with lid, 2 rough-pressing cylinders and 1 cylinder for the reverse movement of the rough-pressing traverse and the hydraulically controlled locking device of the filling box opening, through which the bale is removed from the box.
1 hydraulic final-pressing cylinder with 2 reverse cylinders for the reverse movement of the final-pressing pusher.
1 central and 1 auxiliary distribution equipment by means of which the press can be stopped in any position during operation, if required.
According to the client's wish the press can be supplied with 2 or 3 six-plunger pressure pumps type 5R/6 driven by an electric motor of approx. 75 kW output through a gear box of the double pressure type. One of the pumps is intended as a stand-by unit in the event of occasional inspections.

Operation

The hopper of ample dimensions is fed with material, most speedily by an electro-magnetic crane. Its contents is then tilted by means of 2 hydraulic cylinders into the filling box. Next the lid of the filling box is closed by means of two hydraulic cylinders to a layer of 600 mm (1'11 5/8"). Then the material is pressed down by means of the rough-pressing traverse, which is 3500 mm (11'5 13/16") wide to a depth of 600 mm (1'11 5/8"). Finally the final-pressing plunger compresses the material at a right angle to the foregoing compression to a length of bale of 1000 to 1500 mm (3'3 3/8" to 4'11"). After opening the filling box, which is effected hydraulically, the final-pressing plunger pushes the bale out of the filling box from where it is removed by a crane or by some other means.
The press is equipped with an automatic releasing double-pressure apparatus which disengages the low pressure plungers of the pump when a pressure of 140 atms (1970 psi) is reached, while at a pressure of 300 atms (3960 psi) also the high pressure plungers are disengaged and the pumps run idle.



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Main Data

Filling Box	3500 × 2800 × 850 mm (11′5 11/16 × 9′2 1/4 × × 2′9 1/2″)
Size of Bale	600 × 600 × 1000 up to 1500 mm (1′11 5/6″ × × 1′11 5/6″ × 3′3 5/16″ up to 4′11″)
Weight of Bale	approx. 660 to 1000, maximum 1500 kg (1450 to 2200, maximum 3300 lbs) according to the material compressed
Output	approx. 12 to 14 bales per hour, with two pumps in operation
Output of Electric Motor	75 kW
Liquid	Water and Hydrol
Output of 1 pump per minute	140/66 litres 30 3/4/ /14 1/2 galls)
Pressure	140/300 atms (1970 to 3940 psi)
Stroke	75 mm (2 59/64″)
Speed	380 r. p. m.
Power consumption on pump shaft	approx. 85 HP

Design

The frame, the gear box and couplings are of cast iron, the pump body and the crankshaft are forged of high grade steel, the valves and valve seats are of stainless steel, the main bearings and the crank pin bearings are lined with white metal and the plungers are case hardened, tempered and ground. The pump is provided with circulating pressure lubrication.

WHEN ORDERING THE MACHINE PLEASE STATE KIND AND VOLTAGE OF CURRENT AVAILABLE.

Since the machines are continuously being improved upon, the right to make changes in their details is reserved.

ČOK 52892 a - 5412

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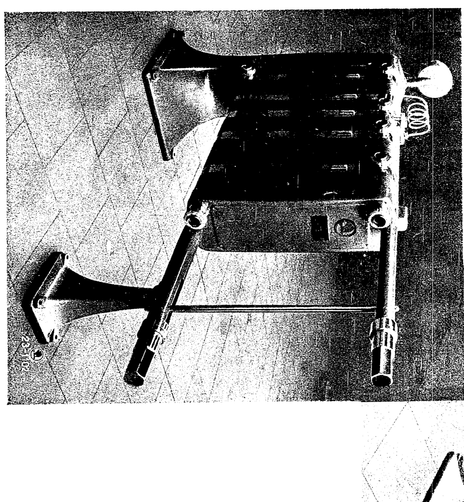
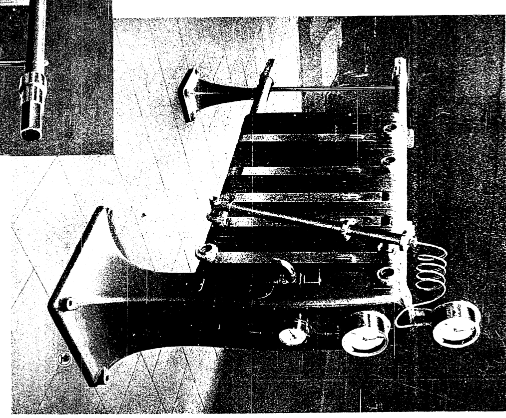
PLATE TYPE MILK AND CREAM PASTEURIZER

ŠKODA





The plate type pasteurizer Škoda consists of a main column carrying the measuring instruments, of working plates and intermediate plates placed on supporting rods, further of a supporting cast iron pedestal, the necessary fittings and foundation bolts.

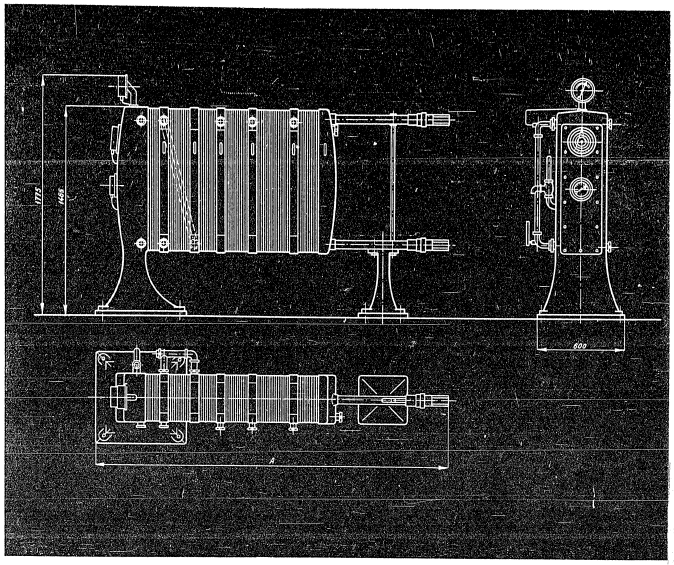
The individual groups of working plates form independent parts of the pasteurizer and are separated from each other by intermediate plates provided with branches through which milk and cream as well as the heating or cooling liquid are led in and out. Milk and cream are led on one side of the working plates whereas the heating or cooling liquid is conducted in counter-current on the other side, whereby a high exchange of heat is attained.

The individual parts of the pasteurizer are: double heat exchanger, milk heater, cream heater, water cooled milk cooler and brine cooled milk cooler. The milk passes into the first part of the divided exchanger where it is preheated by the already pasteurized hot milk to a temperature suitable for cream separation. After the cream has been separated the decreamed milk is conducted into the second part of the exchanger where it is preheated once more. From the heat exchanger the milk passes to the heater, where it is heated to a temperature of 85° C. The heating is done either by circulating hot water, by heated steam, or by circulating condensate. In the first case the circulation of hot water is effected by means of a centrifugal pump and in the second case milk is heated by a steam jet. Milk heated to the pasteurizing temperature is led back to a double heat exchanger, where it is precooled by cold raw milk, flowing in. In the water cooler the milk is cooled to a temperature exceeding by abt. 3° C the temperature of the cooling water and it is cooled finally on a brine cooler to a temperature of abt. + 3° C by means of brine having a temperature — 5° C. The pasteurizing temperatures of milk and cream are registered on registering thermometers and the temperature of hot water is indicated on a circular remote thermometer. The temperature of the heating liquid is kept constant by two automatic regulators so that in case of unchanged flow of milk and constant pressure of steam the pasteurizing temperature remains constant too.

When heating the milk to a temperature of 74° C it is necessary to arrange the necessary number of special plates of large internal area behind the normal heater, which arrangement enables the heated milk to keep its temperature for a period of abt. 20 seconds.

The working plates and other fittings coming into contact with milk are of stainless steel and cast iron. The packing is of special rubber and other parts of steel or cast iron. The brine used in the plate cooler must not contain any chlorine, which would damage the surface of the working plates. For opening or tightening the whole apparatus a simple screw mechanismus is used. The cleaning of the pasteurizer is carried out chemically and the apparatus is opened from time to time for the inspection of the plate surfaces only.

The grooved working plate is pressed of stainless sheet steel and is provided on its edge with



Type	PD-100	PD-300	PD-500
Length A mm - inch	1750 5′ 9″	2200 7′ 3″	2500 8′ 2″

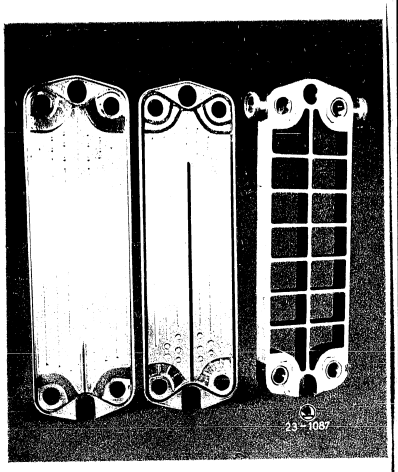
Type	Output liters - gall./hour		Weight kg/l. s		Shipping space m³ - cub. f.	Remark
	milk	cream	net	gross		
PD-100	1000 220	—	980 2160	1030 2270	1,7 60	
PD-300	3000 660	450 99	1200 2645	1500 3307	2,2 78	
PD-500	5000 1100	750 165	1350 2976	1700 3748	2,5 88	

a special groove, in which rubber packing is fitted.

The flow openings for the separate liquids are separated completely from each other, which prevents the mixing of liquids.

When the working plates are placed close to each other the pressed grooves form channels, through which flow milk or cream on one side of the plate, and the cooling or heating liquid on the other.

When the apparatus is pressed together such a tightness is attained that the pasteurizer can withstand the operating pressure up to 3 atm. above atmospheric.



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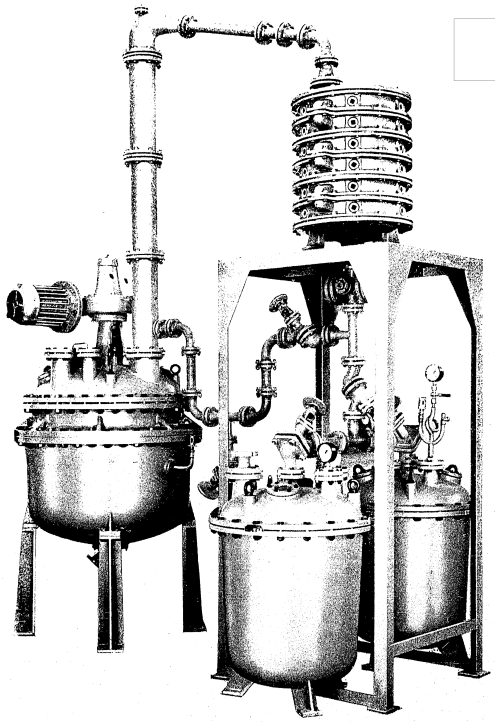
ENGINEERING PRODUCTS
ALS TRADING COMPANY
CZECHOSLOVAKIA

ALLCAST-IRON ACID RESISTING ENAMELLED DISTILLING APPARATUS



CAPACITY 500 LITRES (110 GALLONS)

ALLCAST-IRON ACID RESISTING ENAMELLED DISTILLING APPARATUS CAPACITY 500 LITRES (110 GALLONS)

TECHNICAL DESCRIPTION

The distilling apparatus serves for separating chemical substances by taking advantage of their different volatilities, i. e. by their different boiling points. In industry various methods of distillation are used of which the chief ones are:

a) Distillation at normal pressure of 760 mm (30") Hg, the main purpose of which is purification and separation of substances characterized by a fixed boiling point.

b) Distillation at a reduced pressure, known as vacuum distillation, which is applicable to substances, the boiling point of which at normal pressure (760 mm or 30" Hg) is too high, or to a substance which is decomposed by heating before the boiling point is reached.

c) Distillation at an increased pressure. Raising the boiling point of a certain substance, due to the influence of the atmospheric pressure, depends on the nature of the substance. Therefore, the substances which can more easily be separated by distillation at an increased pressure are those, the boiling points of which at normal pressure, do not differ considerably or which have too low boiling points and the condensation of which would be difficult.

THE APPARATUS CONSISTS OF

1. The duplicator boiler, i. e. the vessel in which the substance to be distilled, is heated.
2. The cooling equipment for the condensation of the vapours produced, i. e. sectional cooler.
3. Two collecting tanks (montejus), i. e. the collecting equipment for the collecting of condensed matter.
4. The control equipment for the observation of the distilling process by means of flow observation windows with thermometer pockets.
5. The connecting piping, i. e. the distilling extension, distilling hood, flanged pipes, elbows, various angle pieces, T-pieces and bends.
6. The closing parts comprising discharge, through-flow and corner valves.

THE DUPLICATOR BOILER

The useful capacity of the duplicator boiler corresponds to the capacity of the distilling apparatus. It is heated by steam. The inside of the boiler can be supplied with an anchor type stirrer and discharge valve or without a stirrer or valve. The cover of the boiler has a filing neck, a neck for the connection of the distilling extensions and other necks as required for its operation, as well as observation windows for the observation of the process taking place inside the boiler.

THE SECTIONAL COOLER

consists of individual sections each of which forms an independent cooling unit. The number of cooling sections determines the cooling area. The coolant used is water or brine.

THE COLLECTING TANKS

The capacity of the collecting tanks is governed by the capacity of the distilling apparatus. They can also be provided with level gauges, if required. They have a neck for the supply of the substance to be distilled, further necks as required for their operation, as well as observation windows for the observation of conditions inside the collecting tanks.

THE CHECKING EQUIPMENT

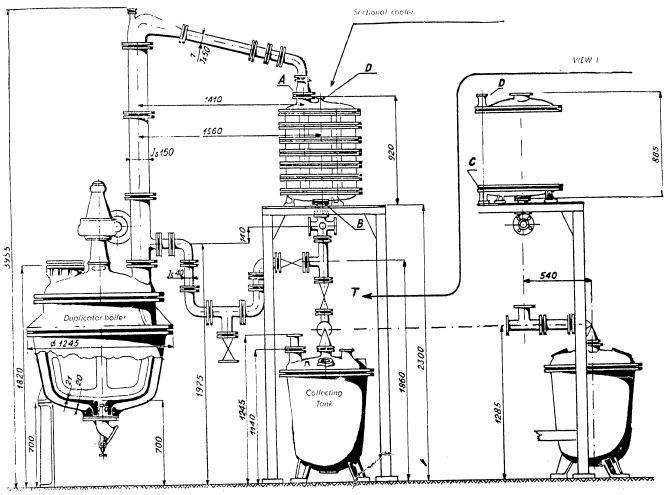
The duplicator boiler and collecting tanks are equipped with pressure or vacuum gauges or pressure-vacuum gauges as required. The duplicator boiler and distilling hood are provided with thermometer pockets. Under the cooler there is a flow observation window which enables the flow of the condensate to be observed.

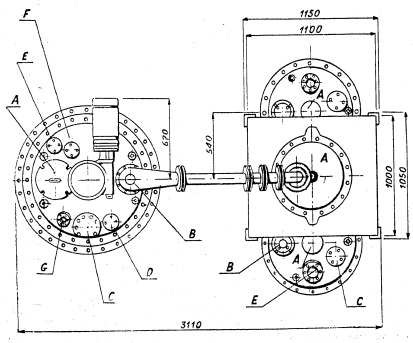
THE CONNECTING PIPING

The various main parts of the apparatus are connected by piping, the main parts of which are the distilling extension and distilling hood. The distilling extension is fitted above the duplicator boiler and can be equipped with a perforated plate to take the Raschig rings. It can also be provided with a branch and observation windows. The other connecting parts are straight flanged pipes, flanged 90°, 45° and 75° elbows, T-pieces, connecting pieces and bends with rated inside diameters according to Czechoslovak Standard Specifications.

COMPLETE DISTILLING PLANT

Capacity 500 litres (110 gallons)-acid resisting enamelled





Duplicator boiler, Capacity 500 litres (110 galons)

Flanges, rated pressure 10, A and B excepted		
Connect. piece	Designation	I. d.
A	Manhole	200
B	Distilling connection piece	150
C	Pressure tube	90
D	Spare connection piece	50
E	Thermometer — pocket	40
F	Fittings	40
G	Observation window	90

Collecting Tank, 250 litres (55 gallons), Montejus

Flanges, rated pressure 10		
Connect. piece	Designation	I. d.
A	Tank filler cap	40
B	Pressure tube joint	80
C	Fittings	40
D	Spare connection piece	40
E	Observation window	90

Sectional Cooler

Flanges, rated pressure 10 Cooling surface 3 m²		
Connect. piece	Designation	I. d.
A	Distilling product — inlet	80/50
B	Distilling product — outlet	40
C	Cooling water inlet	40
D	Cooling water outlet	40

THE CLOSING PARTS

This group comprises valves. The duplicator boiler and collecting tanks can, if required, be equipped with discharge valves. For the control of the operation of the distilling apparatus, through-flow and corner valves are used by means of which the various parts of the apparatus can be disconnected, connected, shut and opened. The distilling apparatus is provided with a U-shaped connecting piping located underneath the cooler and connecting the condensing piping with the distilling extension branch. This is known as reflux and permits the condensate to be returned to the boiler so that the cooler then acts as a return cooler. The valve fitted in the highest part permits samples of the distillate to be taken. In case of fractional distillation the various fractions can be collected in separate collecting tanks. If necessary a dephlegmator can be connected in the apparatus above the distilling extension, or the distilling extension can be modified to act as a dephlegmator.

All surfaces coming into contact with chemicals are enamelled with acid resisting enamel. Rubber-coated asbestos is used as sealing material.

SPECIFICATION

Useful capacity of duplicator boiler	500 litres
Capacity of heating jacket	70 litres
Maximum permissible pressure in inside space of boiler, for continuous operation	4 atms
Maximum permissible pressure in heating jacket, for continuous operation	4 atms
Useful space of both collecting tanks of 250 litres each, total	500 litres
Maximum permissible continuous pressure in collecting tanks	3 atms
Stirrer drive: Flange mounted enclosed electric motor, 380 Volts, 50 cycles	2.5 kW
Speed of anchor type stirrer	34 r. p. m.
Cooling surface of sectional cooler: 6 sections at 0.5 m² each	3 m²
Weights, approximate:	
Boiler	2070 kg
Cooler	530 kg
2 collecting tanks at 570 kg	1140 kg
Closing parts (valves), connecting piping and checking equipment	730 kg

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ČOK 520500 a - 5403

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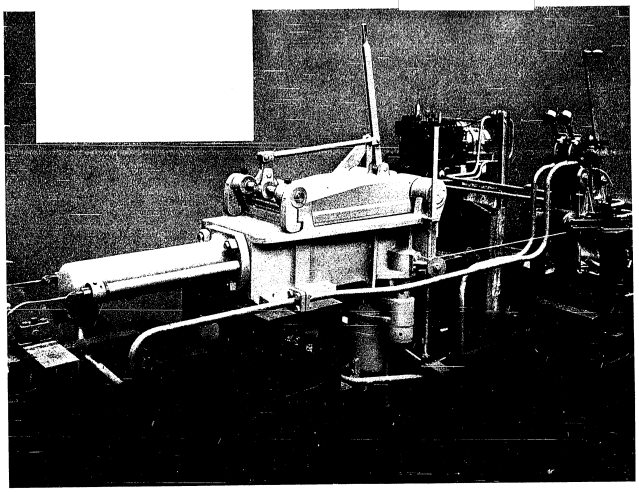


TYPE CPA 100, 100 TON HYDRAULIC FAGGOTING PRESS

The press is intended for the faggoting of iron chips, light iron scrap and non-ferrous metal chips and is driven by a pressure pump.

The main parts of the press are the press housing with a cover, the horizontal cylinder, the vertical cylinder, the distribution and the pressure pump disengaging unit. The cover of the housing is opened by means of a hand lever. The return movement of the horizontal cylinder is operated hydraulically and that of the vertical cylinder by means of a weight.

Operating Procedure: The press housing is filled with chips and the cover closed. The horizontal plunger presses the chips together in one direction. This is followed by vertical pressing. Both working pressures having been relieved by the distribution, the cover is opened. The vertical plunger then pushes the finished faggot to the edge of the press housing from which the faggot is removed. The pressing operation described above is controlled by the distribution from the operator's post.

The press housing is made of cast steel and lined with hard plates which can be replaced when worn.

The hydraulic cylinders are sealed with leather collars which are easy to replace.

Standard Equipment: distribution, disengaging unit, water tank, connecting piping between pump and press.

Total weight . . . . . 6700 kg — 14770 lbs.

TYPE 3R/6 PRESSURE PUMP

Six plunger pressure pump driven by an electric motor by means of a gear box and flexible coupling, two pressure design.

Liquid: water.

The frame and gear box are made of cast iron, the pump bodies and crankshaft of forged steel, the valves and valve seats of stainless steel. The plungers are hardened and ground. The pump is equipped with circulating lubrication.

Weight . . . . . 1630 kg — 3590 lbs.

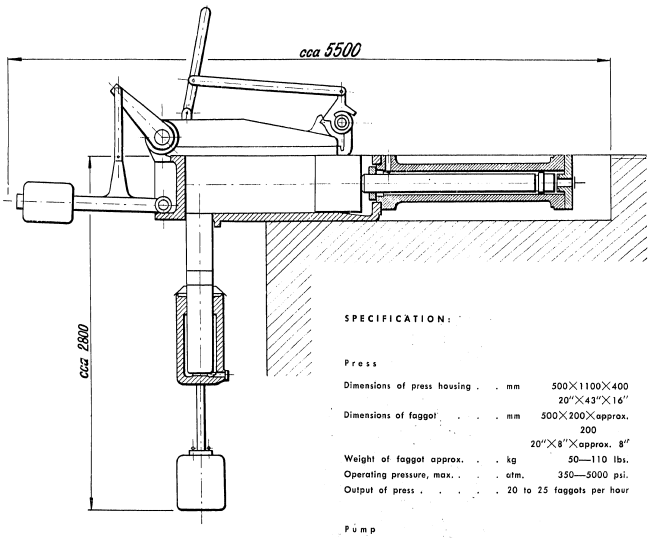
ELECTRICAL EQUIPMENT

1 three phase induction motor for the drive of the pressure pump, surface cooled, with slip ring motor with brush lifting device, with free shaft end.

Weight approximately . . . . . 290 kg — 640 lbs.

1 oil immersed resistance starter, weight . . . . . 15 kg — 33 lbs.

1 automatic circuit breaker, 60 Amps, with electromagnetic and thermal overcurrent protection in two phases, with ammeter, weight . . . . . 13 kg — 29 lbs.



SPECIFICATION:

Press

Dimensions of press housing	mm	500×1100×400
		20″×43″×16″
Dimensions of faggot	mm	500×200×approx. 200
		20″×8″×approx. 8″
Weight of faggot approx.	kg	50—110 lbs.
Operating pressure, max.	atm.	350—5000 psi.
Output of press		20 to 25 faggots per hour

Pump

Output per minute	litres	100.4/15.4
	Imp. Galls.	22.13/3.40
Pressure	atm.	64/350
	psi.	910/5000
Stroke	mm	50—1 31/32″
Diameter of plungers	mm	3×55×5 and 3×24
		3×2 5/32″×3/16″
		and 3×15/16″
Speed	r. p. m.	253
Input on pump shaft, approx.	HP	21

Electric motor 380/220 Volts, 50 cycles:

Continuous rating	HP	27
Speed	r. p. m.	1430
Volume of packing box	cu. metres	— cu. ft.

Please state the operating voltage in your order.

Changes of details of design reserved.

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COK 520728 a — 5505

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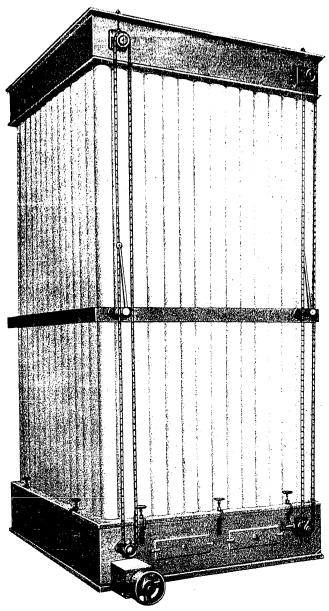

PRESSURE FILTER DUST COLLECTOR

Large filtering surface - requiring little floor space

Simple and dependable cleaning of the filtering tubes

Small number of revolutions — minimum wear of rotating parts

Sturdy, dust-tight structure

Perfect collecting of dust

Low power consumption

First class material

Recommended for various uses

Many possibilities of application

Automatically working Pressure Filters are extremely suitable for purifying dust laden air caused by the operation of cleaning and other similar machines. They reduce the dispersion of dust in workshops to a minimum, improve working conditions and increase the safety of the operation.

The Pressure Filter Dust Collector consists of the following parts:

1. Top box
2. Bottom box with push off bars and a collecting worm
3. Cleaning mechanism
4. Filtering tubes made of "Molino" cotton fabric

The dust laden air is sucked off by means of a fan and blasted into the top filter box where it is, under pressure, directed into filtering tubes. The heavier dust particles fall directly into the bottom box, the lighter particles are deposited on the inner walls of the tubes. A special wiping mechanism wipes them off into the bottom box where the collecting worm moves the dust on to the outlet. The clean, filtered air escapes through the walls of the filtering tubes.

The Pressure Filter Dust Collector is used with equal success in flour-mills as well as in storehouses and all plants where absolutely dust-free operation is essential.

CAPACITIES AND DIMENSIONS

Type		TF 48	TF 64	TF 80	TF 100	TF 120	TF 144
Area of filtering surface	m^2	33,6	44,8	56,0	70,0	84,0	100,8
Filtering tubes:							
number		48	64	80	100	120	144
arrangement		6×8	8×8	8×10	10×10	10×12	12×12
length	mm	2300	2300	2300	2300	2300	2300
diameter	mm	100	100	100	100	100	100
Driving pulley:							
diameter	mm	400	400	400	400	400	400
width	mm	70	70	70	70	70	70
Power required	kW	0,20	0,25	0,25	0,30	0,30	0,35
Dimensions:							
length	mm	780	1020	1020	1260	1260	1500
width	mm	1020	1020	1260	1260	1500	1500
height	mm	3000	3000	3000	3000	3000	3000
Approximate weight:							
net	kg	190	215	240	280	335	380
gross	kg	230	295	330	350	405	460
with sea-packing	kg	280	360	400	430	495	570
Cubic contents of sea-packing	m^3	1,9	2,2	2,8	3,2	3,8	4,2
Code words		Prescent	Prescesar	Prescesion	Prescicero	Prescirkus	Prescyklon

As the machines are continuously being improved, the above illustrations, dimensions and weights are not binding in detail.

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ČOK 52.141a - 5408

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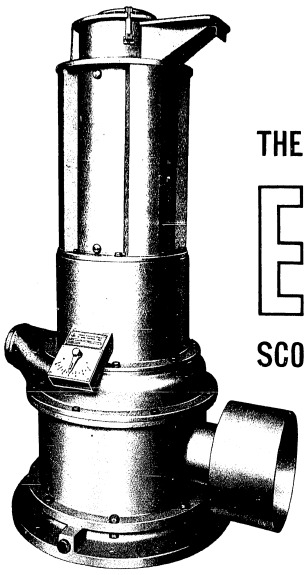

THE EKONOS SCOURER

New method of grain scouring. — Scouring action along the whole length of the grain - grain ends treated. — Minimum waste of endosperm. — Best suited for barley-groats production - maximum output. — Flour milling process facilitated - better flour quality. — Simple adjustment of the intensity of the scouring action. — Minimum wear of grinding wheels. — Ease of operation. — No cumbrous or sensitive mechanisms - all moving parts easily accessible. — Metal construction throughout - long life of the machine.

The »EKONOS« Scourer is extensively used for scouring many different products, such as wheat, rye, barley, oats, rice, millet, etc.

The »EKONOS« scours the grain along its whole length, breaks off its ends, loosens and removes the outer grain husks and the germ without laying bare the flour core of the grain.

The »EKONOS« treats the grain ends and at the same time uniformly grinds off the grain. This feature is of especial importance for rice husking.

The »EKONOS« Scourer is characterized by a well formed, perfectly enclosed structure, taking very little floor space.

There are no choke-ups as the stock stream travels downward by gravity in the vertical direction.

The capacity of the machine depends on the intensity of the scouring action. The »EKONOS« Scourer accomplishes its work with a minimum of grain breakage.

The »EKONOS« Scourer consists of the following parts:

1. Base ring.
2. Gear box.
3. Fan housing with exhaust opening.
4. Outlet box with regulator.
5. Working cylinder.
6. Head with cover.
7. Hollow shaft with grinding wheels and aspirating rings.

The »EKONOS« Scourer can also be delivered with an electric motor on the stand. The great advantages possessed by this arrangement are smooth, silent operation and increased stability of the machine.

CAPACITIES AND DIMENSIONS

			Driven from lineshaft	Equipped with electric motor
Capacity:	stand. scour. action	100 kg per hour	16—18	16—18
	heavy-duty scouring	100 kg per hour	12—14	12—14
Number of revolutions:	vertical shaft	R. P. M.	2020	2020
	countershaft	R. P. M.	500	
	electric motor	R. P. M.		1440
Power required		kW	9—14	9—14
Dimensions:	length	mm	1160	1415
	width	mm	860	760
	height	mm	1817	1587
Weights:	net	kg	780	1040
	gross	kg	870	1130
	with sea-packing	kg	1170	1430
Cubic contents of sea-packing		cu. m. 2.7 — Code words	Ekonos	Ekonos

When ordering please state the voltage for the electric motor. As the machines are continualy being improved, the above illustrations, dimensions and weights are not binding.

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COK 52143a — 5407 — K1 06 (1706-7445) 54

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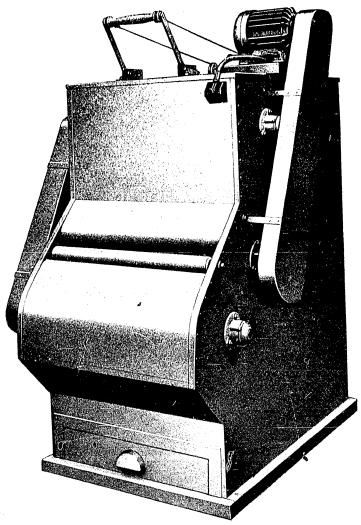
SACK CLEANER



Simple, well proven

Thorough cleaning of sacks without any damage

Dust-free operation - installation possible anywhere

Low power consumption - high output

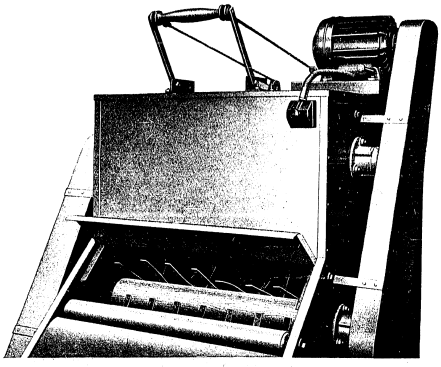
Saves time and labour

Serves a wide range of requirements in many fields

Easy attendance

Our Sack Cleaner does a thorough job; it removes not only dust but also dirt and impurities of all kinds, the eggs and larvae of the flour moth and other insects.

All impurities are collected in the machine and can easily be removed. This prevents reproduction of the flour moth.



The rapidly rotating shaft is equipped with strong leather straps which beat the sack. Only that part of the sack between the two bars of the grate-like base on which the former is placed is beaten. The beating, therefore, is not hard but elastic and damage to the sack is avoided. Flour dust and other impurities fall into the box in the lower part of the machine where they are collected; the cleaned sack does not come into touch with the dust any more because the dust laden air which tries to escape is sucked off by a fan incorporated in the machine. The air is cleaned by means of a built-in filter and then, perfectly dust-free, escapes. The distance between the grate bars is adjustable.

The machine is equipped with an electric motor, the drive is by V-belts.

The Sack Cleaner is used not only in flour mills and similar industrial establishments. It is also used with great advantage, e. g. in barracks, hospitals and hotels and for cleaning covers, blankets, etc.

Capacities and dimensions:

Power required	kW	1,1
Number of revolutions:		
main shaft	R. P. M.	600
motor	R. P. M.	1440
fan	R. P. M.	960
Dimensions: length	mm	1520
width	mm	1220
height	mm	1865
Approx. weights:		
net	kg	270
gross	kg	430
with sea-packing	kg	460
Cubic contents of sea-packing	m^3	4
Code word		pigment

When ordering state, please, the voltage for the electric motor. As the machines are continously being improved, the above illustrations, dimensions and weights are not binding in detail.

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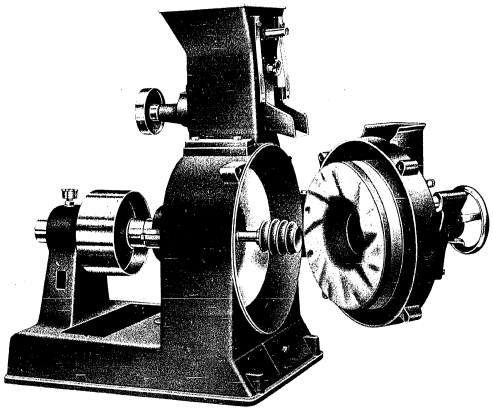

BURR MILL

- ***Sturdy, all iron construction***
- ***Perfect stability***
- ***Economy of space*** - *ideal for service where floor space is limited*
- ***Stones of most durable material***
- ***Ball bearing equipped***
- ***Minimum power consumption***
- ***Large output***
- ***Easy and simple attendance***

The Burr Mills UP 40, UP 50 and Un 70 are suitable for crushing and grinding such cereals as barley, oats, also maize, bran waste and all varieties of foodstuffs.

Sturdily constructed they are of perfect stability, equipped with ball bearings, wear resisting abrasive stones and a built-in magnet. On request we can supply stones made of other material.

The desired fineness of the ground product is adjustable by means of a hand wheel.

From the hopper the material passes to the stones through an inlet mechanism with an adjustable slide valve. Between the inlet and the stones there is fitted a permanent magnet preventing foreign objects i. e. iron and steel from getting into the machine and damaging its interior. The stones are of good durable material and do not require any sharpening. Only when the grinding surfaces have

worn out it is necessary to renew the grooves. This can be done, without dismounting the stones, in the machine.

If the machine is adjusted for a certain fineness of grinding the stones can be separated from each other by means of a shifting lever. The stones are returned into position by turning the shifting lever downwards. The fineness of grinding previously adjusted remains unchanged. If a larger hard object penetrates between the stones they move apart automatically and return into normal position when the object has passed through. The machine turns to the left if seen in the direction from the driving pulley. The output depends on the required fineness of the product and on the kind of material to be ground.

CAPACITIES AND DIMENSIONS		UP 40	UP 50	Un 70
Main dimensions:				
length	mm	1200	1550	1700
width	mm	560	690	1000
height	mm	1020	1225	1600
Stone diameter	mm	400	500	700
Number of revolutions	r. p. m.	800	700	500
Driving pulley:				
diameter	mm	250	300	450
width	mm	150	150	240
Power consumption	HP	5—7	7—9	10—18
Approx. output (grinding of barley):				
coarse grinding	q per hour	3—4	4—6	7—10
fine grinding	q per hour	1,5—2,5	2,5—3,5	3,7—5,0
Approx. weights:				
net	kg	360	615	1100
gross	kg	450	700	1200
gross sea-packed	kg	550	800	1330
Cubic contents of sea-packing	m^3	1,20	1,95	3,42
Code words		unicat	unicum	unicus

AS THE MACHINES ARE CONTINUOUSLY BEING IMPROVED UPON, THE ABOVE ILLUSTRATIONS, DIMENSIONS AND WEIGHTS ARE NOT BINDING IN DETAIL.

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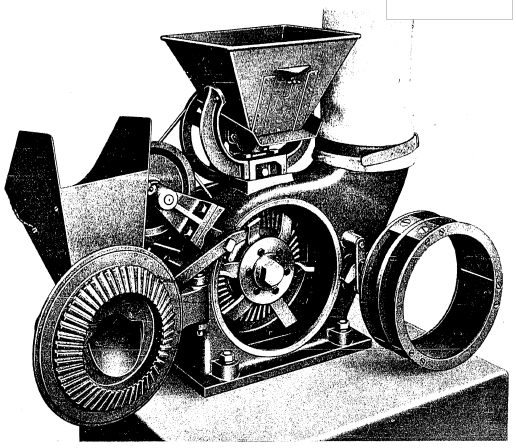

CROSS BEATING MILL "SU"

- Sturdy, practically indestructible all iron construction
- Very little wear
- Grinding elements easily interchangeable
- All lubricators easily accessible — simple lubrication
- Low cost of acquisition and upkeep
- Many years experience — perfect performance
- Wide range of usefulness
- Easy to service

The Cross Beating Mill "SU" is used with very good results for the crushing and grinding of various dry vegetable matter and solid, medium-hard minerals such as clay, dyes, various chemicals, drugs, coal, wood, bark, rubber, cellulose, asbestos, bones, sugar, all kinds of cereals, maize, straw, hay and many other products.

The usefulness of the Grinder "SU" is many-sided, both for crushing or finer grinding. The results are always good and performance very satisfactory.

The Cross Beating Mill "SU" is equipped with a dependable adjustable inlet. Built in the inlet funnel there is a removable magnet protecting the mill against iron and steel foreign matter.

The grinding elements, i. e. the beaters fixed with screws to the revolving hub and the stationary side grinding rings, crush and grind the material to the fineness desired. The ground product passes then through a screen. The revolving movement of the rotor produces a strong air-stream which is conducted directly upward into a filtering tube where even the finest particles are held back and the air passes freely through the fabric of the tube. This prevents undue heating of material and increases the output of the grinder.

The interior of the machine is easily accessible and is easy to clean so that a change of the material to be ground is very quick and without any difficulties.

Output and power consumption depend on the kind of material, its moisture content and degree of fineness desired. The characteristics stated below are the average values.

SU

The Cross Beating Mill "SU" can be driven either by flat belt or by V-belts; the Mill Model "SU 3" can also be driven by individual electric motor directly connected through flexible coupling.

When ordering the Mill with individual motor please state the voltage. It is recommended to send a sample of material to be ground (50—100 kg, according to the kind of material) for test grinding and a sample of finished product (½ kg).

The equipment of the machine includes basic spare parts.

CAPACITIES AND DIMENSIONS

Main dimensions:		SU 1	SU 2	SU 3	SU 4
length	mm	680	915	1120	1460
width	mm	660	840	1090	1400
height	mm	660	970	1175	1520
height with filtering tube	mm	3515	3735	3935	4175
diameter of grind. chamber	mm	250	315	465	600
Outlet:					
length	mm	350	490	700	920
width	mm	130	200	280	310
Driving pulley*):					
diameter	mm	110	130	180	250
width	mm	100	100	120	200
Number of revolutions	per min.	5000	4500	2900	2400
Power required (approx.)	HP	1—4	3—7	8—14	25—35
Output ratio	—	1	1,5	3,5	5,5
Approx. weights:					
net	kg	120	290	530	790
gross	kg	140	335	580	840
gross sea-packing	kg	160	360	630	900
Cubic meters sea-packing	m^3	0,2	0,6	1,1	3,1
Code words	—	sujed	sudav	suter	sucet

*) Pulley for drive by flat belt.

Alterations in design reserved. All illustrations, measurements and weights without obligation; they may vary occasionally in detail only.

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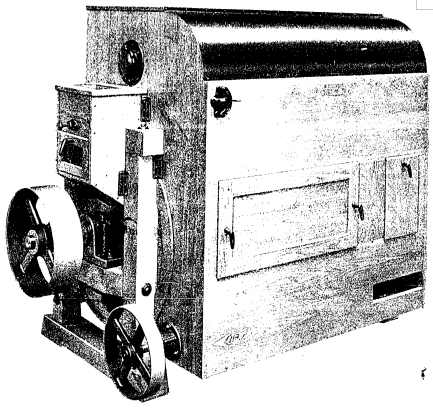

THE "LP" SCOURER

- Simple and sturdy structure
- Large working surface
- Emery lining made of the best material
- Adjustable steel beaters
- Minimum wear
- Ball or roller bearings
- Highly effective aspiration
- Large output — low power consumption
- Little attention required

The continuously working "LP" Scourers which serve in a great number of mills everywhere, are compact, of high quality construction and proven design. They hold an unsurpassed record for endurance and operating economy. Their equipment includes the greatest number of improvements based on long years of experience.

The thousands of Scourers in service are proving safe, dependable and highly efficient.

The "LP" Scourer is used with unequalled effect for scouring rye, wheat and barley. An important feature of the "LP" Scourer is its very strong aspirating action affecting the grain not only at the inlet, but also in the scouring case and at the outlet. Even blighted wheat is thoroughly purified during its passage through the machine.

The scouring case is made of the best abrasive material, keeping its hardness and uniform sharpness. The beaters are adjustable and made of special steel. The wear of the scouring case and the beaters is insignificant.

According to requirements the "LP" Scourer is either supplied with a built-in fan, or arranged for central aspiration.

The "LP" Scourers, machines of very simple construction, have definitely demonstrated their ability to do a thorough and highly efficient job at a very low power consumption. Behind all the outstanding improvements and unequalled qualities of our machines are many years of ingenious and specialized engineering developed in the designing and building of the largest variety and greatest number of mill machines.

LP

CAPACITIES AND DIMENSIONS

		LP 4	LP 5	LP 6
Main dimensions:				
length	mm	2140	2620	2940
width	mm	1090	1410	1420
height	mm	1530	1975	1975
Inner dimensions of the scouring case:				
diameter	mm	750	1000	1000
length	mm	1200	1500	1750
Driving pulley:				
diameter	mm	440	600	700
width	mm	125	175	200
Number of revolutions	per min.	450	330	330
Approx. power required	HP	10—14	15—19	20—26
Approx. output per hour during wheat scouring	q	14—18	18—23	23—30
Approx. weights:				
net	kg	920	1460	1780
gross	kg	1120	1800	2170
gross sea-packing	kg	1280	2070	2500
Cubic meters sea-packing	m^3	5,2	10,4	11,7
Code words	—	elpec	elpepi	elpeso

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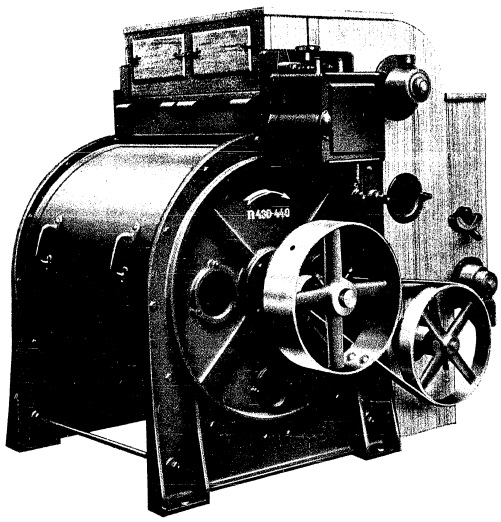
THE DELTA DECORTICATOR



- Resistant, durable emery lining
- Adjustable beaters
- Convenient time control
- Produces grit in a single operation
- Thorough cleaning and separation
- Efficient exhausting
- Outstanding economy
- Ball bearings
- Noiseless operation

The DELTA decorticator is a machine of periodical action i. e. the grain is automatically fed at regular time intervals into one of two decorticating chambers, whereas the second chamber at the same time discharges thoroughly decorticated product. The length of decorticating process can be conveniently adjusted (within the time limits ranging from 6 to 60 seconds) and changed even when the machine is running. The intensity of scouring can be thus changed to meet varying requirements. The DELTA decorticator is an extremely useful machine for manufacturing grit.

The main drum consists of two sections and is provided with two charging and two discharging windows. The drum sections alternate in their action so that the machine maintains its constant speed and there are no speed alterations even at discharging. The machine runs very smoothly with the minimum losses of driving power.

The lining is made of high-quality emery plates ensuring long years of troublefree service even under the hardest working conditions and heavy loads. The damaged plates may be easily repaired without renewing the lining as a whole.

The DELTA decorticator is available either with its own exhausting fan or with pipes to be connected to the aspirating main of the plant. The aspirating system is very reliable and separates positively even the smallest particles of refuse from the product which is therefore quite clean.

The beaters are adjustable to compensate any wear which may appear after long service. The machine therefore maintains its efficiency and excellent quality of decorticating.

SPECIFICATIONS

Type	DELTA 4	
Main dimensions		
overall length	1760 mm	69 19/24 in
overall width	1385 mm	54 17/32 in
overall height	1340 mm	52 49/64 in
Drum dimensions		
diameter	750 mm	29 17/32 in
length	2×500 mm	19 11/16 in
Driving belt pulley		
diameter	500 mm	19 11/16 in
width	150 mm	5 29/32 in
working speed	430 r. p. m.	
Power required	14—16 HP	
Approximate capacity per 1 hour	14—16 q	3086—3527 lbs
Approximate weight		
net	1020 kg	2249 lbs
gross	1200 kg	2645 lbs
gross sea packing	1450 kg	3196 lbs
Shipping dimensions	4.8 cu.m	169 cub. ft
Codeword	deltac	

As we are steadily improving the construction and design of our machines, the specifications and illustrations of this pamphlet are not binding.

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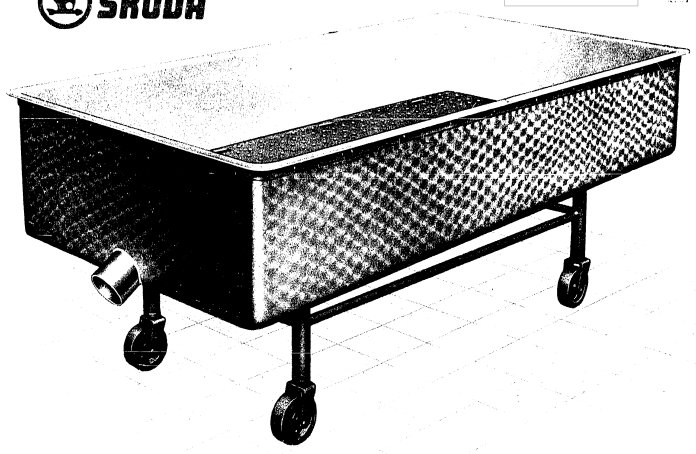

DRIP TUB FOR CURD

The drip tub for curd is welded together of 99,5 per cent. aluminum sheet, and has a bottom with considerable fall. On the lowest spot there is a drain branch. The tank has well rounded corners to make the cleaning easier, and its edge is reinforced by a welded-on angle iron. All welding seams are machined on both sides and checked for tightness; the tank is pickled and the outside surface provided with ring-like ornamentations. On the longer sides of the tub there are girders bearing the perforated aluminum hurdles for whey dripping. The hurdles are easily removable.

The tank is seated on a welded iron undercarriage with four steerable wheels provided with rubber tyres.

Type	Dimensions mm/inch			Weight kg/lbs		Shipping space m³/cub. f.	Remark
	length	width	height	net	gross		
OVT-2	2000 6'7"	1000 3'3"	800 2'8"	80 176	120 264	1,6 57	

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KOVO LIMITED, METAL & ENGINEERING PRODUCTS AND RAW MATERIALS TRADING COMPANY
PRAHA - CZECHOSLOVAKIA

TRAVELLING CURD PRESS

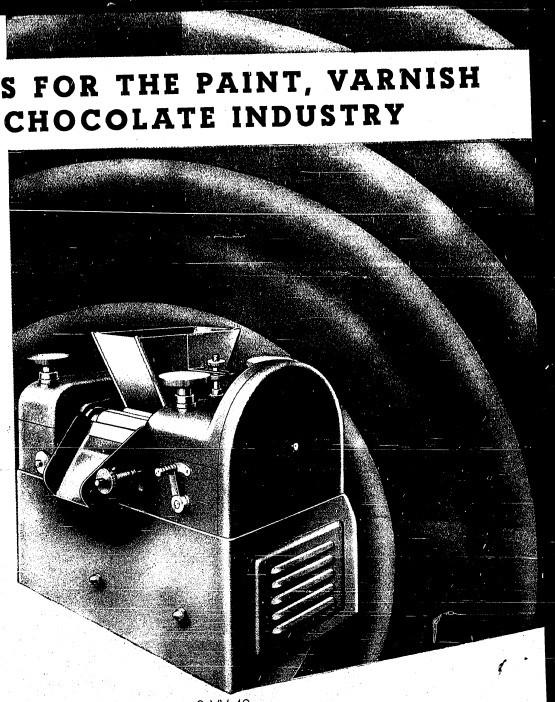
ŠKODA

PSK-481

This travelling press serves for the first pressing of the curd. It consists of a tub welded together of 99,5 per cent. aluminum sheet, having a considerable bottom fall, and on the lowest spot of the tub there is the drain branch with dairy screw joint. On the bottom of the tub there is an aluminum supporting grate which carries the four-part removable aluminum insert upon which the cheesecurd is poured to be first pressed. A perforated hurdle is applied to the cheesecurd from above, and is pressed down by a tubular frame. All seams are machined on both sides and checked for tightness, and all corners and edges are well rounded to make the cleaning easy. All aluminum parts are pickled and the outside surface of the tub is provided with ring-like ornamentations. The tub is seated on a robust welded iron undercarriage moving on four steerable wheels provided with rubber tyres. Two columns from angle iron are fitted on the iron undercarriage to carry the yoke with the pressing screw and a hand wheel used to make the hurdle move towards the bottom insert. The yoke with the screw are easily removable from the eyes of the supporting columns.

Type	Dimensions mm/inch			Weight kg/lbs		Shipping space m³/cub. f.	Remark
	length	width	height	net	gross		
PL-3	2000 6' 7"	1100 3' 7"	700 2' 4"	200 440	240 530	1,6 57	

MACHINES FOR THE PAINT, VARNISH AND CHOCOLATE INDUSTRY



3 VV 40

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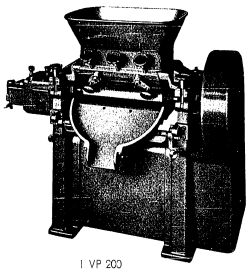
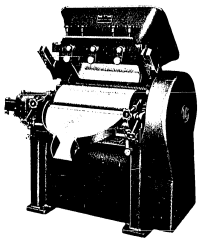
PRODUCTS AND RAW MATERIALS
CZECHOSLOVAKIA

Roller Grinding Mills and Universal Mixing and Kneading Machines



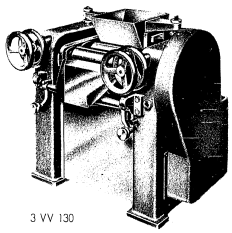
1 VP 200



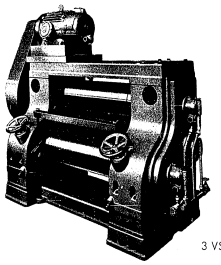
1 VP 320

TYPE	Funnel capacity lts	Dimensions in mm					Electric motor kW	Weight kgs		Output kgs	Shipping volume m³	Codeword
		machine			roll			net	gross			
		Height	Width	Length	dia	Length						
1 VP 200	30	1030	1215	735	200	390	2,2	370	490	40—100	1	SIROL
1 VP 320	105	1310	1610	930	320	650	4	1150	1350	100—250	2,1	BIROL

Single Roller Mills with one grinding bar. Chilled steel, watercooled rollers. Absolutely silent in action — high output.



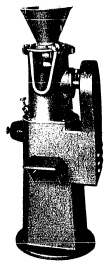
3 VV 130



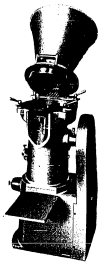
3 VS 320

TYPE	Funnel capacity lts	Dimensions in mm					Electric motor kW	Weight kgs		Output kgs	Shipping volume m³	Codeword
		machine			roll			net	gross			
		Height	Width	Length	dia	Length						
3VV 40	0,8	420	400	390	42	100	0,18	48	63	2—3	0,07	LAROL
3 VV 130	6	820	865	650	130	300	1,1	353	430	25—50	0,5	MAROL
DDR	25	975	1420	1085	200	600	2,2	800	1000	25—100	1	DEROL
3 VS 320	70	2000	1200	2200	320	900	15	3200	3600	120—150	4	VEROL

High-speed Three Roller Mills for processing paints, lacquers, pastes etc. The models DDR and 3 VS 320 are available with watercooled rollers. Either chilled steel or porphyry rollers can be supplied.



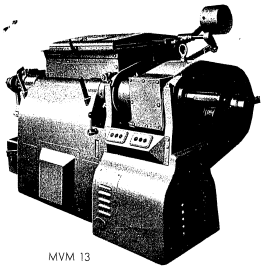
NS 100



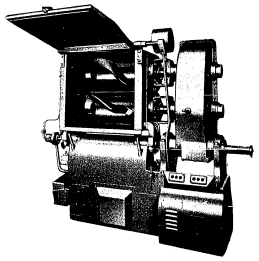
NS 200

TYPE	Grinding stones dia mm	Funnel capacity lts	Dimensions mm			Electric motor kW	Weight kgs		Output	Shipping volume m³	Codeword
			Height	Width	Length		net	gross			
NS 100	100	2	900	350	300	0,25—1400	50	70	2—4	0,2	dovin
NS 200	200	14	1320	460	425	0,5—900	115	180	3—10	0,6	dozer
NS 300	300	45	1320	530	430	0,75—900	220	290	5—15	0,7	dohit
NS 500	500	120	1170	780	1200	1,5—900	425	535	10—25	1,05	dolus

Flat Stone Mills for grinding paints and lacquers. Chilled grinding stones.



MVM 13

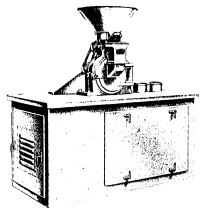


MVM 13

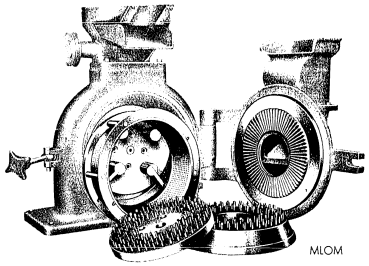
TYPE	Mixing vessel capacity lts		Dimensions mm			Electric motor kW		Weight kgs		Shipping volume m³	Codeword
	Total	Useful	Height	Width	Length	Drive	Tilting	net	gross		
MV 2	8	6	1300	700	750	0,5	—	140	215	0,5	MILA
MV 6	22	25	1400	1125	1250	1,5	—	360	500	1,25	MIMA
MV 10	126	100	1920	1482	1760	4	0,55	1100	1360	1,8	MOSA
MV 12	250	200	1800	1800	2200	5	0,8	1500	1900	6	MOVA
MV 14	500	400	2000	2250	2600	8	1,1	2080	2530	7	META
MVM 13	400	315	1450	2250	2000	8	1,5	2200	2600	6,3	MEHAL

Universal Mixing and Kneading Machines for various branches of industry. Two mixing blades Sigma. Types MV 2, MV 6 we supply with hand-operated tilting. The tilting of larger types is operated automatically by means of an electric motor.

Desintegrators and Filling Machines



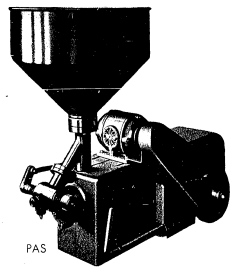
MLOM



MLOM

TYPE	Funnel capacity lts	Dimensions mm			Grinding plate dia mm	Electric motor kW	Weight		Output kgs	Shipping volume m³	Codeword
		Height	Width	Length			net	gross			
MLOM	20	1430	800	1300	200	3,2	290	440	50—200	2,5	MLOM
MLOV	55	1915	1060	1440	400	7,5	500	700	100—1200	3,5	MLOV

Molecular Mills (desintegrators) for extremely fine grinding of dry and brittle substances.



PAS

TYPE	Funnel capacity lts	Dimensions mm			Extent of filling cm³	Electric motor kW	Weight		Fillings/h	Shipping volume m³	Codeword
		Height	Width	Length			net	gross			
PAS	50	862	630	920	5—1000	0,5	120	175	cca 1500	0,8	FILMA

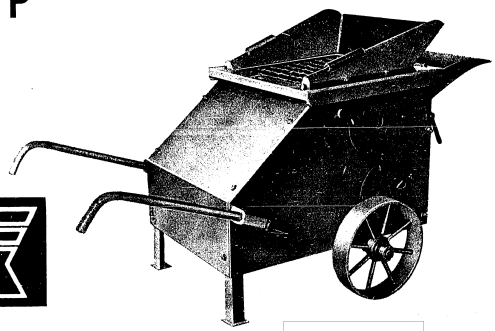
Semi-automatic Filling Machine for filling semi-liquids into tins, jars etc.
We reserve the right to make alterations in the design.

VP 005 a 6004

2701017 - 2120

MOULDING SAND SCREENER

Type MPP



TYPE	height × width × length in mm	dimensions of sieve	electric motor			output cu. metres per hour	weight abt. kg	
			kW	V	n			
MPP	1050 × 820 × 1360	550 × 460	3	220/380	1420	3 - 4	300	

All data not binding.

ENQUIRIES AND EXPORT:

STROJEXPORT
PRAHA - CZECHOSLOVAKIA

L AND ENGINEERING PRODUCTS
TERIALS TRADING COMPANY.
ISE II,
CLAVSKÉ NÁM., PRAHA II., CZECHOSLOVAKIA

STAT

MOULDING SAND SCREENER

Type MPP

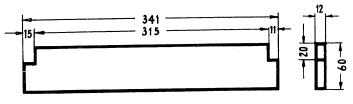
The moulding sand screener, type MPP, replaces in small and medium-size foundries the sand dressing plant. The sand is broken up, thoroughly aired and conveyed to the required place.

WORKING METHOD:

The sand is cast on to a vibratory sieve separating coarse or undesired objects contained in the sand. Screened sand falls on a thrower which breaks it up and thoroughly ventilates. The thrower conveys the treated sand to the required place by means of an adjustable tilting cover mouted above the thrower chamber.

DESIGN:

The machine is welded of sheet-iron parts so that it is of a relatively light; weight it may, therefore, easily be moved about the foundry floor. The machine is driven by an electric motor mounted on its frame. A V-belt drives the rotary thrower and the vibratory sieve. The motor is adjustable and easily accessible, after removing the shields arranged on the sides of the machine. The thrower shaft runs in ball bearings Its blades are easily removable by loosening two fixing screws and by turning the rings mounted at either side of the thrower. Owing to the fact that the blades are subject to a relatively high degree of wear, it is recommended to keep them in stock. The blades can be manufactured of flat iron of commercial quality to the dimensions and shape shown in the following sketch:



LUBRICATION:

With respect to the working environment in foundries and in order to secure a long life of the machine and its faultless operation, it is essential to lubricate the machine daily before starting operation by means of grease cups with which the machine is provided. The grease used should be of a good brand.

CLEANING AND MAINTENANCE:

To ensure a maximum and lasting output the machine must be kept in good conditions. After concluding the work remove the sand sticking to the vibratory sieve, funnel, thrower and walls to prevent its becoming hard thus hindering operation of the machine. Inspect the entire machine from time to time, preferably at regular intervals, and replace all parts worn out.

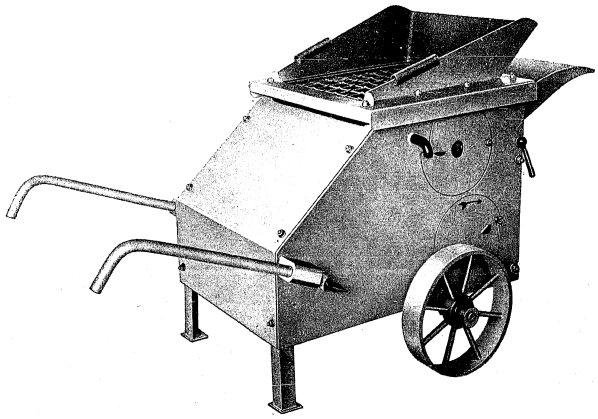
Prospekt S-1048

Printed in Czechoslovakia.

473 - Ref. No. 5-0052-06 49

MOULDING SAND SCREENER

TYPE MPP



TYPE	height × width × length mm	dimensions of sieve	electric motor			output cu. metres per hour	weight about kg	
			kW	V	n			
MPP	1050 × 820 × 1360	550 × 460	3	220/380	1420	3 — 4	300	

Data not binding.

MOULDING SAND SCREENER

TYPE MPP

The moulding sand screener, type MPP, replaces in small and medium-size foundries the sand dressing plant. The sand is broken up, thoroughly aired and conveyed to the required place.

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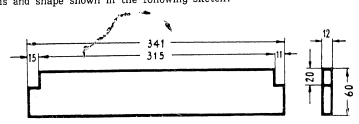


LUBRICATION:

With respect to the working environment in foundries and in order to secure a long life of the machine and its faultless operation, it is essential to lubricate the machine daily before starting operation by means of grease cups with which the machine is provided. The grease used should be of a good brand.

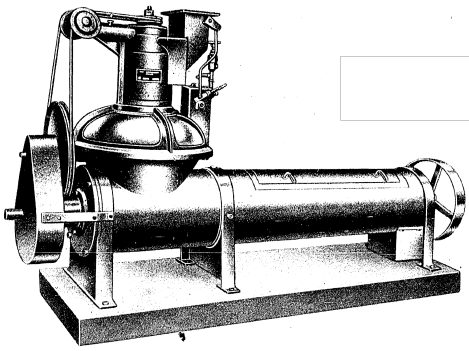
CLEANING AND MAINTENANCE:

To ensure a maximum and lasting output the machine must be kept in good condition. After concluding the work remove the sand sticking to the vibratory sieve, funnel, thrower and walls to prevent its becoming hard thus hindering operation of the machine. Inspect the entire machine from time to time, preferably at regular intervals, and replace all parts worn out.

STROJEXPORT PRAHA - CZECHOSLOVAKIA

ČOK 520003 a - 5309

Printed in Czechoslovakia



ATOMIZING DAMPER

- **Uniform damping of grain**
- **Possibility of inspecting the damping process through glass walls**
- **Trouble-free continuous operation**
- **High output**
- **Low power consumption**
- **Negligible attendance**
- **Ball bearing equipped**

By means of the Atomizing Damper very small quantities of water are added to the grain thus damping its husk before the grinding process.
Uniformity of the damping process, accurate adjustment of the degree of moisture, economy in operation and simple attendance are the greatest advantages of our Atomizing Damper. The apparatus consists of two parts, i. e. the water atomizing section and the mixing worm. From a hopper the grain passes a control flap and enters a glass cylinder containing two rotary discs. The grain falls onto the top disc and is cast by centrifugal force from the middle towards its periphery thus being uniformly distributed. Water coming from the centre of the lower disc through a needle valve is atomized to a fine damping screen ensuring uniform moistening of each single grain. The stream of grain is retained in the bottom part of the apparatus

and driven to the outlet under continuous mixing. Through the glass walls it may be ascertained whether thoroughly clean grain is fed into the damper. If the grain is not clean chaff particles and impurities deposit themselves on the glass which is automatically cleaned by a simple wiping mechanism.
It is therefore advisable to convey the grain to the damper directly, i. e. without any interconnecting worm conveyors and elevators as these usually loosen a considerable amount of chaff which deposits itself in the atomizing chamber. It is necessary to convey the grain into the damper directly from the brushing machine. When the feed of the grain is interrupted the inlet valve closes automatically thus stopping the water supply. The Atomizing Damper is equiped with a driving pulley for belt drive.

CAPACITIES AND DIMENSIONS

Main dimensions:		
length	2025 mm	6' 8"
width	630 mm	2' 1"
height	1020 mm	3' 4"
Driving pulley:		
diameter	400 mm	1' 4"
width	60 mm	2⅜"
Number of revolutions	80	r. p. m.

Approximalive output	6000 kg per hour	13,228 lbs
Approx. weights:		
net	250 kg	551 lbs
gross	310 kg	683 lbs
with sea-packing	350 kg	772 lbs
Cubic contents of sea-packing	1.75 m³	62 cu. ft.
Code word	zap	

STROJEXPORT PRAHA - CZECHOSLOVAKIA

ČOK 52936 a - 5502

Printed in Czechoslovakia (ZMT 03 Vyškov - 2338 54)

ZETAPRINTON 30

CARACTÉRISTIQUES

Dimensions du papier: 105×148 mm à 365×500 mm

Surface d'impression: 90×135 mm à 331×438 mm

Hauteur maximum de la pile de papier: 300 mm

Sortes de papier utilisables: 30 g/m² à 350 g/m²

Moteur électrique: tension 220/110 V, courant alternatif monophasé
puissance 0,75 kW
vitesse 1450 t/min.
tension 320/220 V, courant alternatif triphasé
puissance 0,8 kW
vitesse 1450 t/min.

Dimensions de la machine 1360×1040×1170 mm

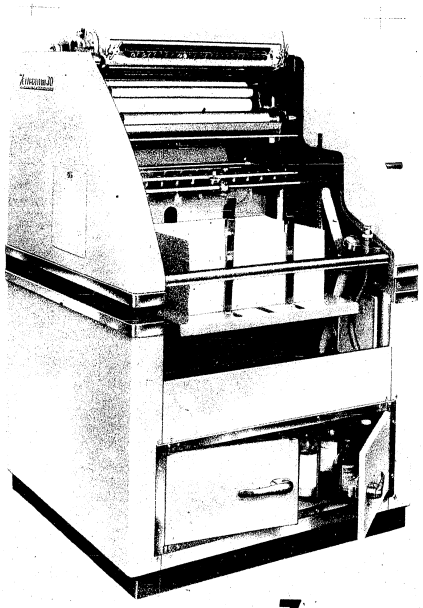
Poids de la machine: net 560 kg
brut 805 kg

Dimensions de la caisse de transport: 1430×1130×1540 mm.

KOVO

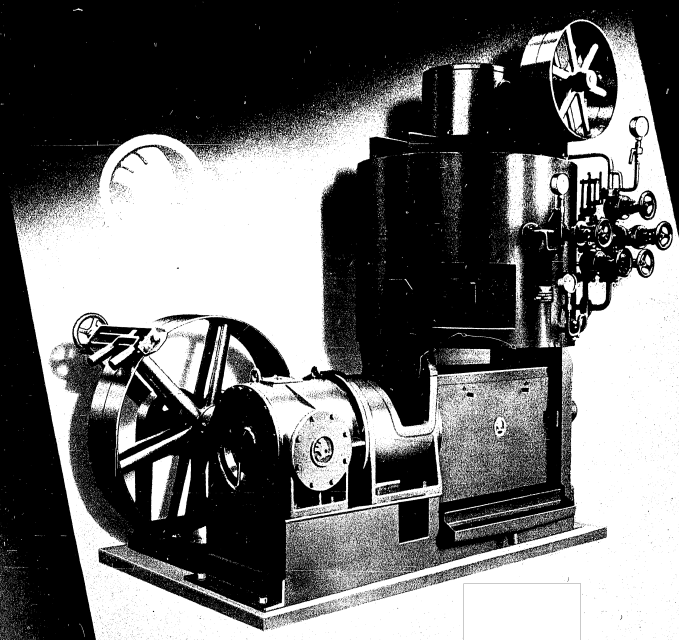
PRAHA — TCHÉCOSLOVAQUIE

PETITE MACHINE POUR GRANDS OUVRAGES



ZETAPRINTON 30

WORM OIL EXPELLERS

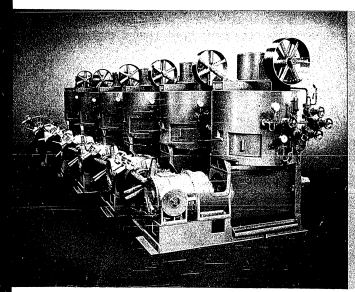


STROJEXPORT
PRAHA - CZECHOSLOVAKIA

GINEERING PRODUCTS
S, TRADING COMPANY
CHOSLOVAKIA

STAT

WORM OIL EXPELLERS



In the course of the last two decades the heavy and expensively working hydraulic presses have completely disappeared from modern oil pressing plants. At present continually operating worm oil expellers are used almost generally for pressing oil from oilseed. The Škoda Works, who, for a number of years have been manufacturing hydraulic presses for this purpose, have also introduced the manufacture of modern continually operating worm oil expellers, while the manufacture of hydraulic presses is being continued. The Škoda worm oil expellers are used to advantage for expelling oil from seeds of flax, hemp, sesame, sunflower, cotton, poppy, mustard, mowrah, as well as from groundnuts, copra, palm-kernels, Babassu, tung nuts, castor, soya beans, maize germ and similar oil bearing seeds and nuts. The Škoda worm oil expellers are manufactured in two types, i. e. "series 600" for belt drive, and "series 700" for direct electric motor drive. Both types have an identical design of the cage, the pressing worm and the heating pan and give the same production results. The only difference is in the arrangement of the driving mechanism of the worm shaft and of the heating pan stirrer.

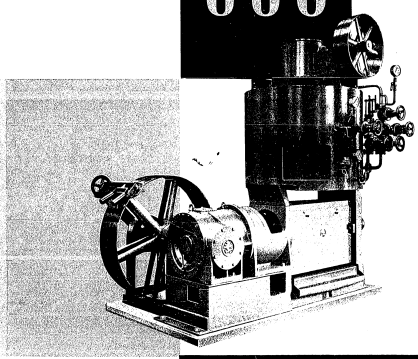
WORM OIL EXPELLER "SERIES 600" WITH BELT DRIVE

DESIGN OF THE EXPELLER: The fundamental parts of the Škoda continually operating worm oil expeller (A) are the horizontal cage consisting of steel sections and the pressing worm built up of worm sections keyed onto the main worm shaft. The cage consists of a heavy frame made up of ribs and lined inside with bars made of a special heat treated steel. The bars are shaped in such a manner that, when the cage is assembled, there remain narrow regular gaps of an accurately calibrated width. The pressing worm rotating inside the cage is designed in such a way as to subject the oilseed to a gradually increasing pressure as it passes between the worm and the cage wall. The individual worm sections are also made of a special steel and are heat treated. The bars divide the cage into four sections lined on their circumference with bars of various shapes forming gaps 0,15 to 1,20 mm wide between the individual sections of the cage. The width of the gaps between the individual bars can be changed by inserting spare bars of a different shape, depending on the kind of oilseed being processed. (Seeds with a richer oil content require larger gaps.) The pressure arising between the cage and the rotating pressing worm effects separation of oil from the disrupted vegetable tissue and the oil is forced through the narrow gaps of the cage. The oil flows along a collecting tray into a trough provided with a sieve and collects in a receiver located below the floor. To prevent splashing of the oil expelled through the gaps of the cage the latter is provided with guard sheets.

DESIGN OF THE HEATING PAN. Through the charging hopper (a) the oilseed is brought into the two-stage heating pan (B) placed above the worm expeller and used to prepare the seed for the pressing operation. It is divided into an upper and a lower heating chamber. In the open top chamber the seed is preheated by steam of 3 atm. (42 lbs sq in) supplied into the heating ring by the distributing piping (b) equipped with the necessary fittings. In the lower chamber the seed is heated by steam of an equal pressure supplied into the heating bottom where it is moistened by direct steam to the required degree. Through the pan passes a vertical shaft rotating at 28 r. p. m. which is driven from the line shaft by means of a bevel gear and a fast and a loose pulley. The seeds are stirred by the arms of a stirrer mounted on the vertical shaft and moving close to the bottoms of both the heating pan chambers. The seed proceeds from the top heating chamber into the lower chamber. The stirring of the material processed prevents its overheating. The side walls of the pan are properly insulated. For heating the pan and moistening the oilseed approx 20 to 40 kg. (40—80 lbs) of steam are required per hour.

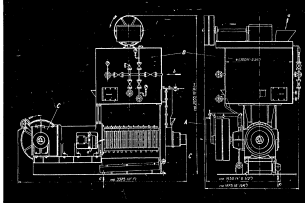
DRIVING MECHANISM. The Škoda continually operating worm oil expeller "series 600" is driven from the line shaft by a belt pulley. The expeller is provided with two belt pulleys one of which drives the main worm shaft and the other the heating pan stirrer. A loose pulley is fitted to either belt pulley. The speed of the belt pulley driving the main shaft is reduced by a planetary gear combined with a bevel gear housed in a common box (C) forming with the expeller casing a shapely whole. Before starting operation the gear box must be filled with absolutely pure mineral oil of a viscosity of abt. 14° E at 50° C (122° F). Should the ambient temperature be higher than normal, the lubricating oil must be correspondingly heavier. The oil is sprayed onto the gear box walls by the gears which rotate in it and is conducted through lubricating holes to the bearings. The gear box is fully enclosed and well sealed against the leakage of oil and penetration of dust. Except for occasional checks and exchange of oil carried out on the occasion of regular annual inspections, it does not require any special maintenance. The average power consumption is 15 kW (20 HP) depending on the kind of seeds processed. The starting and stopping of the expeller as well as of the heating pan stirrer is effected by means of a hand operated belt shifter.

Series 600



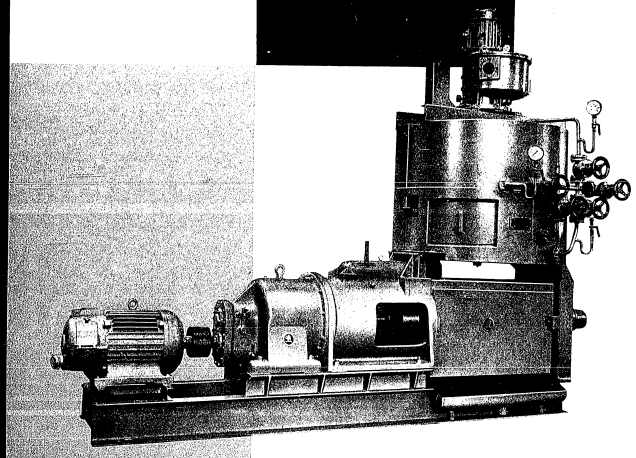
OUTPUT. The output of the machine is given by the speed of the pressing worm. At a single passage of the seeds and a speed of 13 r. p. m. of the pressing worm, i. e. 260 r. p. m. of the belt pulley, the average output is 12 to 16 tons of seed in 24 hours, the oil remaining in the cake amounts to 12—15 per cent. For vegetable materials with a high percentage of oil, such as copra and palm kernels, double pressing is generally carried out resulting in a higher oil yield. When operated in this manner the first pressing is done at about 22 r. p. m. of the worm, i. e. 440 r. p. m. of the belt pulley, the output being 20—25 tons in 24 hours at a yield of abt. 50 per cent of the total content of oil in the seed. During the second passage (final pressing) the worm rotates at 6 and the belt pulley at 120 r. p. m. treating 5 to 7 tons of seeds in 24 hours. The arrangement of the expellers is then as follows: 1 pre-expeller and 3 final expellers, both categories differing in the assembly of the cages and the pressing worm.

OPERATION. Well cleaned oilseed of a maximum moisture content of 5 to 6 per cent should be used. The moisture content of the oilseed can be regulated within certain limits by preparing the seed in the heating pan. If an excessively moist seed comes into the heating pan the direct steam supply into the lower chamber has to be fully closed which causes the bottoms of the chambers to warm up intensively, thus removing a part of the moisture from the oilseed before starting operation. If material of the same kind is processed the attendance is very easy so that one operator can attend to 10 continually operating worm oil expellers. Particular care must, however, be paid to starting and stopping of the expeller. Before stopping the expeller the cage must be filled with soft material, as otherwise the heavily compressed residue in the cage would get hard making it necessary to dismantle and clean the cage before re-starting operation. The expeller output as well as the oil content of the cake can be regulated during operation by shifting the pressure taper by means of a hand operated setting wheel.

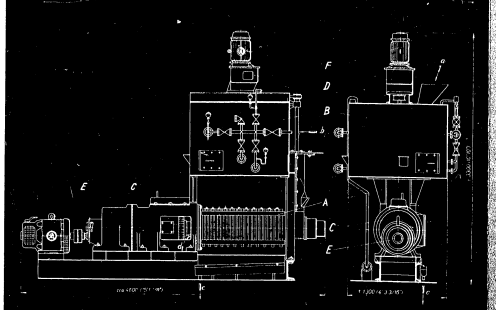


A Oil expeller
B Heating pan
C Gear-box for oil expeller
a Seed inlet
b Steam inlet
c Raw oil outlet
d Residues discharge

Series 700



A Oil expeller
B Heating pan
C Gear-box for oil expeller
D Gear-box for heating pan
E Electric motor for expeller-drive
F Electric motor for heating pan stirrer drive
a Seed inlet
b Steam inlet
c Raw oil outlet
d Residues discharge



WORM OIL EXPELLER "SERIES 700" WITH DIRECT ELECTRIC MOTOR DRIVE

DESIGN OF THE EXPELLER. The Škoda continually operating worm oil expeller "series 700" is fundamentally identical with "series 600". The speed of the worm shaft and of the heating pan stirrer are the same. Therefore all data given about the "series 600" expeller also apply to "series 700", except for the design of the drive. Contrary to the belt driven expeller the directly driven expeller "series 700" is provided with a mechanical shifting device for shifting the pressure taper during operation.

DRIVING MECHANISM. The Škoda continually operating worm oil expeller "series 700" is driven by two electric motors one of which (E) of an output of abt. 18 kW drives the main worm shaft, and the other (F), of 2 kW drives the heating pan stirrer. In the case of a pre-expelling unit (with 21 r. p. m. of the pressing worm) or a single passage expeller (with 13 r. p. m. of the pressing worm) the worm shaft is driven by an electric motor of 18 kW at 1450 r. p. m. The main worm, shaft of the final expeller working at 6 r. p. m. is driven by an identical electric motor running at 710 r. p. m. The speed of the main electric motor (E) is reduced by a planetary gear box (C), which in the final expeller has two speeds which are transmitted to the main worm shaft. Higher speeds are used for the treatment of harder oilseeds. The 2 kW, 710 r. p. m. electric motor (F) drives the stirrer and is directly coupled to the reduction gear box (D) reducing the speed of the electric motor to 28 r. p. m.

DIMENSIONS OF THE WORM EXPELLER "SERIES 600". Overall length of the expeller 11'1" (3375 mm), max. width of expeller with heating pan 6' ¾" (1900 mm), • Max. height of the expeller with pan 9'8 ¼" (2955 mm).

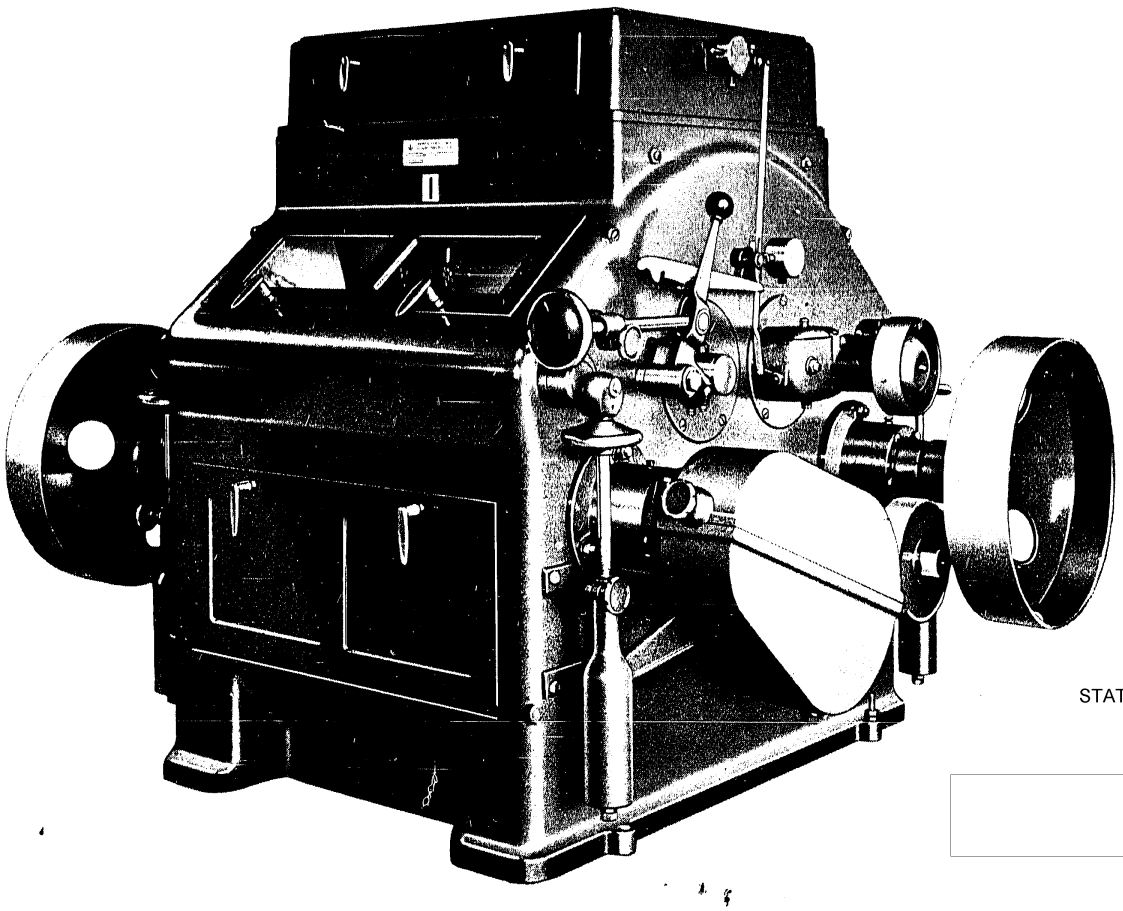
DIMENSIONS OF THE WORM EXPELLER "SERIES 700". Overall length of expeller 15'1 ⅛" (4600 mm), max. width of expeller with heating pan 5'5 ¼" (1660 mm), max. height of expeller with heating pan 10'10" (3300 mm).

SPARES. The continually operating worm oil expeller is designed to expose the lowest possible number of parts to wear. In addition high quality material is used for all parts subject to heavy friction so that wear is reduced to a minimum. If the expeller is properly attended to only the worm sections on the main shaft and the shaped bars forming the shell of the individual cage sections are subject to wear. Both these parts are made of special heat treated steel. In view of the fact that only the above mentioned parts wear out, it is recommended to order them as spares together with the expeller. It is also advisable to order spare bars in two sizes giving narrow or wide gaps which would be best suited for processing oilseeds of various properties.

APPROXIMATIVE SHIPPING SPECIFICATION

Type		Net weight kg/lbs	Gross weight kg/lbs	Shipping space mm/ft
Worm oil expeller Škoda "series 600" with belt drive	1 case (expeller)	3020/6660	3500/7720	3500 × 1300 × 1400 11'6" × 4'1" × 4'7"
	1 case (pan)	1200/2650	1650/3640	2000 × 1900 × 1800 6'7" × 6'3" × 5'11"
Worm oil expeller Škoda "series 700", directly driven	1 case (expeller)	3300/7280	3800/8380	4750 × 1500 × 900 15'7" × 4'12" × 2'11"
	1 case (pan)	1300/2870	1750/3860	1900 × 1800 × 1950 6'3" × 5'11" × 6'5"

Printed in Czechoslovakia. Ref. No. IC 011 x 5006



STAT

DOUBLE ROLLER MILL | MODEL Pc

- **Stable, simple, all-metal structure**
- **Extra well built**
- **Smooth, noiseless running**
- **Mass production constantly checked**
- **All parts interchangeable**
- **Rollers of best raw materials, accurately machined and perfectly counterbalanced**
- **Simple attendance**

The Roller Mills Pc are fitted either with roller bearings or with oil-ring bearings, the latter having a special ball suspension assuring an automatic adjustment of the bearing bush. Helical gears, running in an oil-bath, are accurately cut.

If the flow of material is interrupted, the rollers separate automatically and the wipers move away. The change of rollers for corrugating is quick and easy. The feeding of grain into the rollers is automatic and hand operated.

For use in smaller mills the Roller Mill Pc is equipped with a signalling apparatus.

The Roller Mills Pc are used for grinding all kinds of grain, crushing oats, etc. They can also be used with good advantage for grinding sugar, oily seeds, spices, minerals, melting substances, various chemicals and other products. In

this case it is necessary to come to an understanding with the producer. We have been manufacturing roller mills for 70 years. More than 16.000 machines have left our works and have a wide reputation all over the world for fine performance, dependable and accurate running and long life.

Pc

CAPACITIES AND DIMENSIONS

		Pc 25/50	Pc 25/60	Pc 25/80	Pc 25/100	Pc 25/125	Pc 30/50	Pc 30/60	Pc 30/80	Pc 30/100	Pc 30/125
Rollers:											
length	mm	500	600	800	1000	1250	500	600	800	1000	1250
diameter	mm	250	250	250	250	250	300	300	300	300	300
Overall dimensions:											
length	mm	1610	1710	1930	2170	2440	1610	1710	1970	2190	2480
width	mm	1400	1400	1400	1400	1400	1400	1400	1400	1400	1400
height	mm	1450	1450	1450	1450	1450	1450	1450	1450	1450	1450
Driving pulley:											
diameter	mm	450	450	550	550	550	500	500	550	600	650
width	mm	120	120	130	130	140	120	120	130	140	160
Rollers rev. p. min.											
rye and wheat rolls		300—320	300—320	300—320	300—320	300—320	260—280	260—280	260—280	260—280	260—280
smooth rolls		190—210	190—210	190—210	190—210	190—210	180—200	180—200	180—200	180—200	180—200
Approx. weights:											
net	kg	1980	2160	2550	2800	3460	2200	2450	2820	3080	3800
gross	kg	2280	2480	2930	3220	3980	2520	2760	3240	3540	4350
sea-packed	kg	2420	2670	3100	3400	4440	2680	2920	3420	3760	4630
Cubic meters sea-packed	m^3	4,65	4,90	5,50	6,00	6,60	4,65	4,90	5,50	6,00	6,75
Code words		hecup	hecus	hecuos	hecuti	hecutid	hicup	hicus	hicuos	hicuti	hicutid

Approx. capacity of the Roller Mill Pc (rolls ⌀ 250) for wheat coarse-grinding: 120—180 kg per hour on 1 dm roll length (ca 320 revs. p. min., power consumption 0,25 kW).

Alterations in design reserved. All illustrations, measurements and weights without obligation; they may vary here and there in detail only.

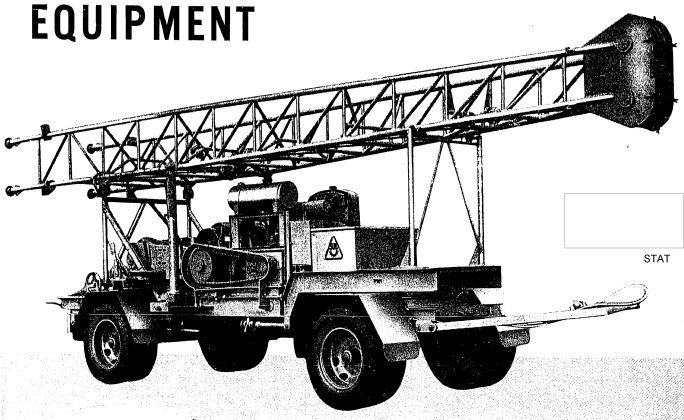
STROJEXPORT • PRAHA • CZECHOSLOVAKIA

ČOK 52 552a - 5410 - 2701511

Printed in Czechoslovakia

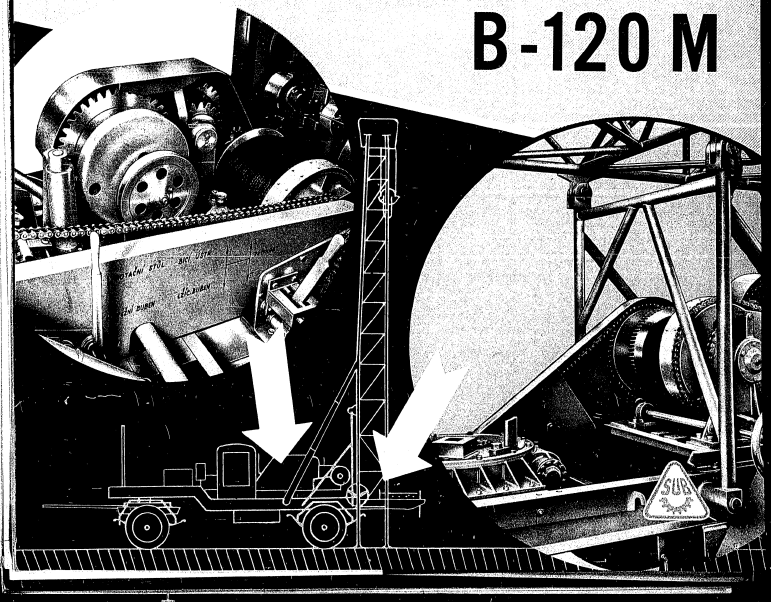
DRILLING EQUIPMENT

STROJEXPORT



STAT

B-120 M



TECHNICAL DESCRIPTION:

The chassis consists of a frame and two four-wheel axles in front of which a ball-swivelling base and drawbar are located and is fitted with two reciprocally independent brakes.

Construction of the drilling derrick is of welded seamless tubes. The four legs of the derrick are fitted with set-screws. The crown block of the pulley block consists of 6 pulleys.

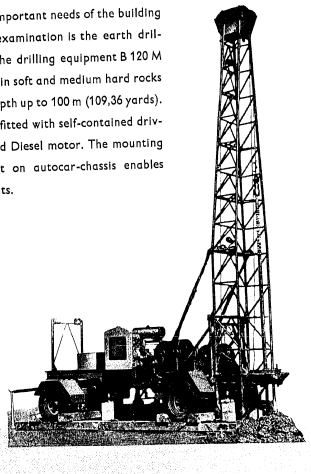
Lifting and inclining movements of the derrick are transmitted to the telescope shaft by motor, gearing from the hoist and by chains.

The driving equipment consists of a Diesel motor with autocar radiator. The reduction gear box is fitted with hand lever for the two-way run and a cone clutch.

The two-drum hoist consists of a hauling drum, sand-line spool, eccentric percussion pin, temper worm and band brakes.

For electric lighting of this equipment serves the direct current of the autocar dynamo for a tension of 24 V and 300 W and accumulator batteries arranged in series.

One of the most important needs of the building geology and soil examination is the earth drilling equipment. The drilling equipment B 120 M serves for drilling in soft and medium hard rocks with maximum depth up to 100 m (109,36 yards). The equipment is fitted with self-contained driving equipment and Diesel motor. The mounting of the equipment on autocar-chassis enables easy displacements.



TECHNICAL DATA

The whole equipment.	362 1/5"
Length of the equipment	125 49/50"
Height of the equipment	86 61/100"
Width of the equipment	18 16/25 mi
Driving speed limit	11,022 93/100 lbs
Weight of the drilling equipment	36,834 21/100 lbs
Weight of the tools and accessories	328 ft 1 2/25"
Boring depth	15 7/25"
Initial boring diameter	9 13/20"
Final boring diameter	11 024 lbs
Carrying capacity of the chassis	
Drilling derrick.	354 1/3"
Height of the derrick	17,638 22/25 lbs
Safe working load in the roller flange	13 39/50"
Pulleys diameter	
Windlass.	12 7/25"
Hauling drum diameter	19 137/200"
Belt brake diameter	26,5 r. p. m.
Number of revolutions of the hauling drum I	53 r. p. m.
Number of revolutions of the hauling drum II	19 137/200"
Winding speed I	39 37/100"
Winding speed II	8 27/100"
Sand-line spool diameter	15 3/4"
Belt brake diameter	43/100"
Cable diameter for the sand-line	63/100"
Diameter of the drilling cable and the hoist rope	
Eccentric striking pin for percussion drilling.	7 87/100", 15 3/4", 23 31/50"
Stroke	25 str./min.
Number of strokes	
Rotary table.	14 17/100"
Free passage	4 r. p. m.
Number of revolutions I	8 r. p. m.
Number of revolutions II	3 : 54
Worm gearing ratio	2 11/25" x 2 11/25"
Intercalary bed for the square section	
Transmission gear box.	1 : 5
Gear ratio	
Driving motor „Škoda" 2 S 110.	14 HP
Output	750 r. p. m.
Number of revolutions	11 gallons
Contents of the fuel tank	

STROJEXPORT

PRAHA - CZECHOSLOVAKIA

ČOK 520 355 a - 5504

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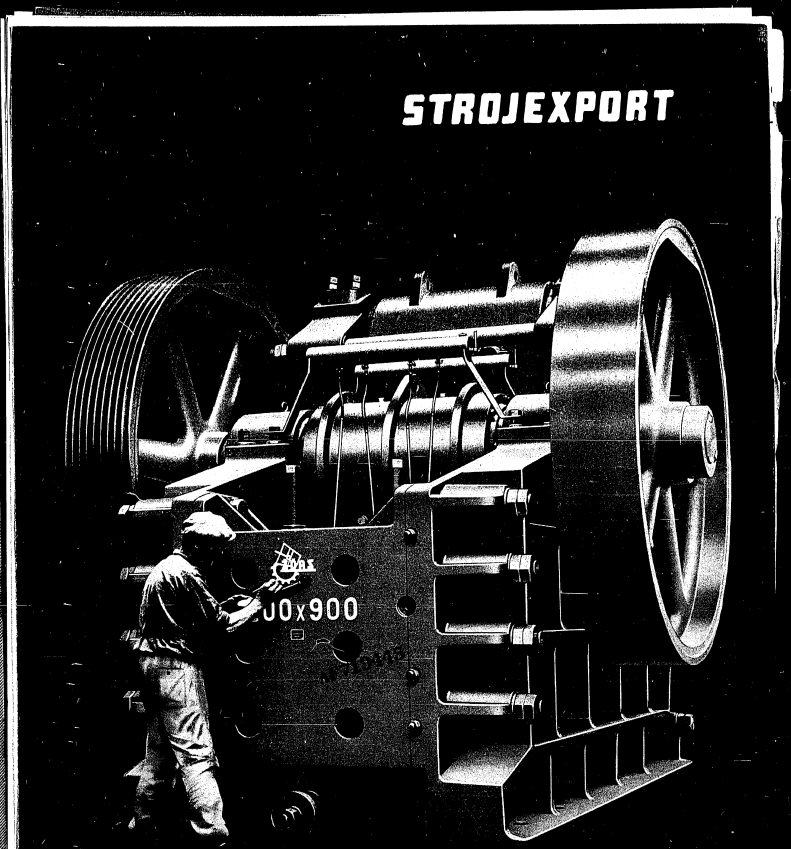
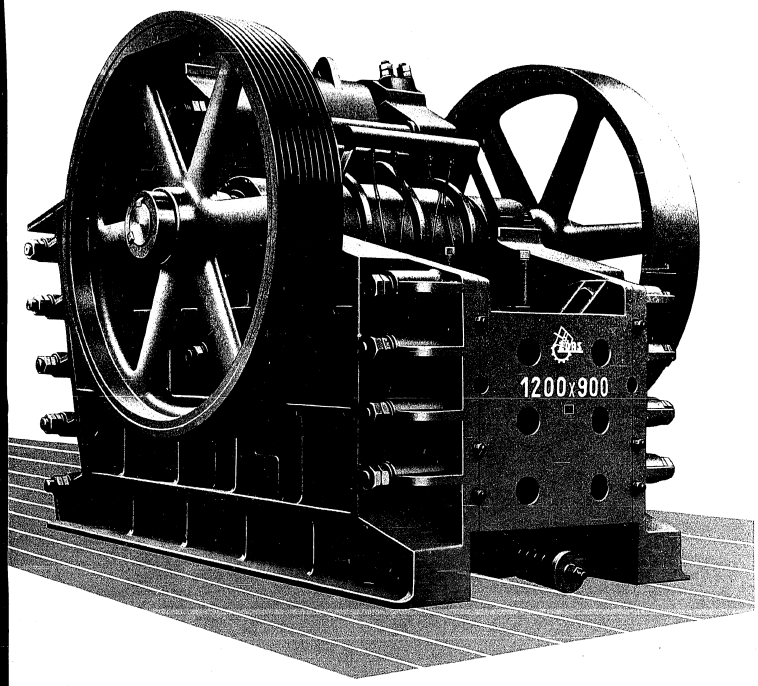


COARSE CRUSHER

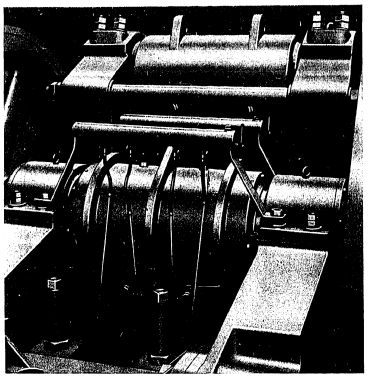
V - 0 - 2



THE TYPE V-9-2 COARSE CRUSHER

is used for crushing hard minerals up to the compactness of the hardest basalt. The minerals are normally crushed with a slot of 200 mm (8''). The stroke of the moving jaw can be adjusted from 16 to 20 mm (5/8'' to 13/16'') to suit the properties of the mineral crushed.

Size of mouth	length	1.200 mm	47.24 in.
	width	900 mm	35.43 in.
Pulley	diameter	2.500 mm	86.61 in.
	width	430 mm	16.93 in.
	r. p. m.	180	
Required input	135 kW		
Output per hour in cu. m. with a gap of 200 mm (7.87 in.) (according to the hardness of material)	90—140 cu. m. 3.178—4.945 cu. ft.		
Required space approx.	length	5.200 mm	205 in.
	width	3.300 mm	130 in.
	height	3.400 mm	134 in.
Weight approx.	72.000 kg—158.400 lbs.		



Design.

The main parts of the crusher, i. e. the four-part bed, the eccentric, the pendulum and the adjusting wedge, are made of first grade cast steel and designed so as to ensure thorough rigidity of the machine even at its maximum output.
The crushing space is lined with a three-part crushing jaw and the side walls are protected from abrasion by wedges. All these parts are made of tough, abrasion-resisting manganese cast steel.
The plates of the pendulum and face side are fixed by means of bolts and tightening wedges. Their design allows each of them to be turned 180^0 and also interchangeability of the edge jaws which substantially lengthens their life.
The shaft of the eccentric is housed in the body and the side walls in double-row self-aligning roller bearings. The pendulum shaft is pressed into the pendulum and runs in white-metal-lined bearings arranged in the bed.
All the bearings as well as the whole lubrication system are thoroughly sealed against the penetration of dust.

Lubrication.

The bearings of the eccentric and pendulum are lubricated with bearing grease by means of a pressure grease gun. The supporting shells are lubricated with oil from central oil tanks.

Drive.

The crusher is driven by an electric motor, or by another source of power, by means of V-belts on to the flywheel.

For the purpose of saving driving power it is contemplated to use two electric motors with one flywheel.

Accessories.

As standard accessories are supplied a set of spanners, a grease gun, instructions for operation and record cards for the machine.

Special Accessories.

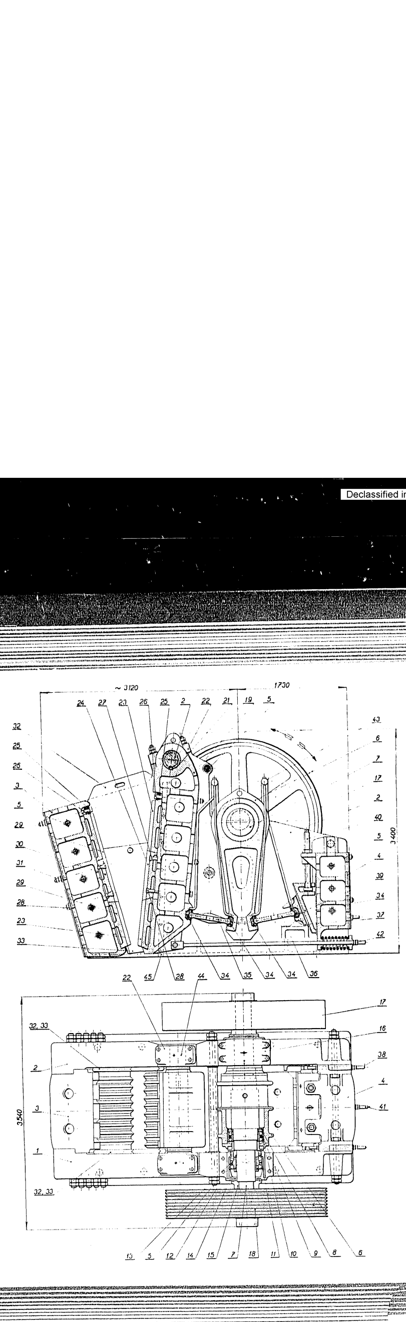
The special accessories contain:

A complete electrical outfit (electric motor, starter, contactors, protection) inclusive of a small belt-pulley and slide.
V-belt.
Protective cover of rotating parts.
Spare parts according to list.

When ordering electric motors, please state the operating voltage.

The machine is continuously being improved upon so that detailed data are not binding.

V 9-2



1. R. H. side wall
2. L. H. side wall
3. Front bed side
4. Rear bed side
5. Connecting bolt
6. Eccentric body
7. Eccentric shaft
8. Locking disc
9. Self-aligning roller bearing of eccentric
10. Eccentric cover
11. Labyrinth ring
12. Labyrinth ring
13. Self-aligning roller bearing in side wall
14. Sealing cap of side wall bearing
15. Labyrinth ring
16. Cap of side wall bearing
17. Flywheel
18. Flywheel with V-grooves
19. Pendulum
20. Pendulum shaft
21. Pendulum bush
22. Cap of pendulum shaft
23. Moving edge crushing jaw
24. Moving middle crushing jaw
25. Tightening wedge
26. Tightening wedge screw
27. Screw of crushing jaw
28. Screw of crushing jaw
29. Fixed edge crushing jaw
30. Fixed middle crushing jaw
31. Crushing jaw screw
32. Upper part of wedge
33. Lower part of wedge
34. Supporting shell
35. Front brace plate
36. Rear brace plate
37. Guide
38. Tightening screw
39. Adjusting wedge
40. Suspended screw
41. Spring rod
42. Spring
43. Lubricating equipment
44. Pressure lubricator
45. Supporting side plate

STROJEXPORT

PRAHA-CZECHOSLOVAKIA

ČOK 57.58 a. 050

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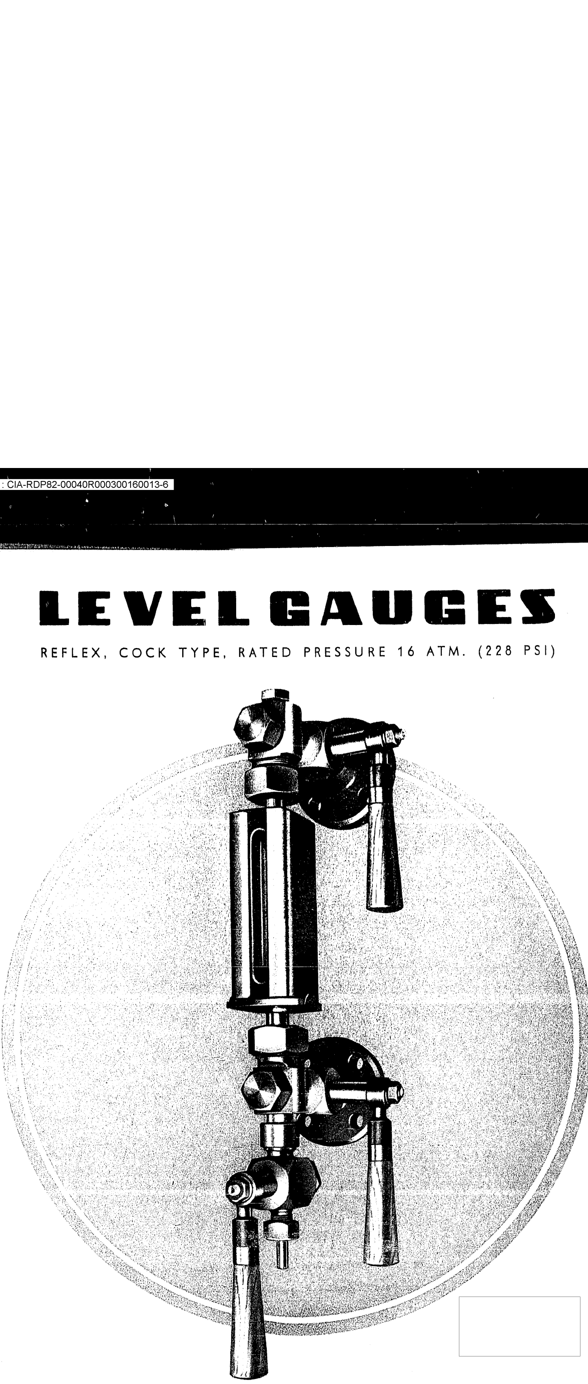
LEVEL GAUGES

REFLEX, COCK TYPE, RATED PRESSURE 16 ATM. (228 PSI)



STAT

The level gauges are intended for liquids.

Operating class:

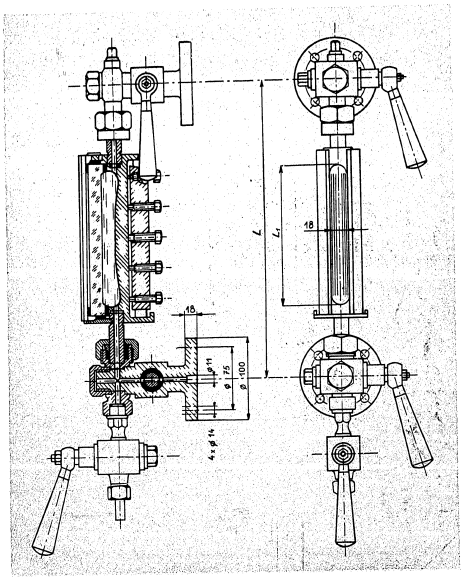
I. up to 16 kg/cm² (228 psi), up to 120 °C (248 °F)

II. up to 13 kg/cm² (185 psi), up to 130 °C (266 °F)

The gauge consists of the head and the drain cock, made of steel, and the cast iron glass carrier and is fitted with a "Klinger" reflex glass. The carrier can be turned round its axis.

LEVEL GAUGES

REFLEX, COCK TYPE, for centre-to-centre distance of 400 mm (15$^{3}/_{4}$"), for water, for a working overpressure of 12 kg/cm² (171 psi) and a temperature of 190 °C (374 °F), right hand, with indicating plates: "Normal Level", "Maximum Level" and "Minimum Level" fitted in the centre-line of the indicating length and 50 mm (1$^{11}/_{32}$") below and above it respectively.



The level gauge shown is a right hand one. The sketch is not binding for the design.

SPECIFICATION

Designation: Level gauge 400, Jt 16/II - NTS 134270, for water 12 kg/cm², 190 °C, R. H., indicating plates: "Normal Level" in centre, "Maximum Level" 50, "Minimum Level" 50.

L	L_1	Dimensions of Glass	Weight
300 mm 11$^{13}/_{16}$"	124 mm 4$^{7}/_{8}$"	34×17×140 mm 1$^{11}/_{32}$"×2$^{11}/_{32}$"×5$^{1}/_{2}$"	9.5 kg 21 lbs
350 mm 13$^{3}/_{4}$"	174 mm 6$^{27}/_{32}$"	34×17×190 mm 1$^{11}/_{32}$"×2$^{11}/_{32}$"×7$^{1}/_{2}$"	10.5 kg 23 lbs
400 mm 15$^{3}/_{4}$"	234 mm 9$^{7}/_{32}$"	34×17×250 mm 1$^{11}/_{32}$"×2$^{11}/_{32}$"×9$^{27}/_{32}$"	11.5 kg 25 lbs
500 mm 19$^{23}/_{32}$"	334 mm 13$^{1}/_{8}$"	34×17×320 mm 1$^{11}/_{32}$"×2$^{11}/_{32}$"×12$^{19}/_{32}$"	16.0 kg 35 lbs

Method of Supply. Level gauges for a rated pressure of 16 kg/cm² (228 psi) are supplied complete with drilled flanges, with glass and indicating plates provided their wording and location are specified in the order.

Unless the order specifies right hand or left hand, right hand level gauges will be supplied.

Unless a special quality of gauge is specified a gauge of guaranteed quality, as per ČSN Standard Specification No. 133060, will be supplied.

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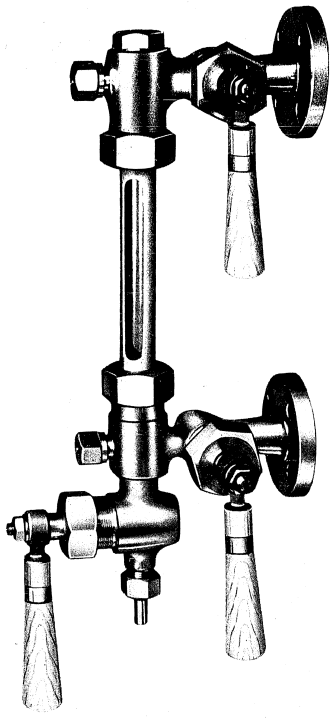
LIQUID LEVEL INDICATORS

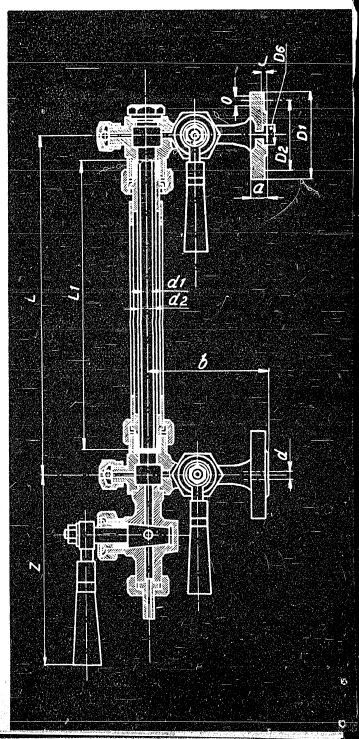
WITH STUFFING-BOX ARMS AND PROTECTIVE TUBE

TS

- TYPE TS 134254 CAST-IRON
- TS 134255 BRONZE
- TS 134258

STAT





LIQUID LEVEL INDICATORS WITH STUFFING-BOX ARMS AND PROTECTIVE TUBE

TYPE TS 134254 CAST-IRON - TS 134255 BRONZE - TS 134258

The level indicators are used for steam boilers up to a working pressure of 8 kilos/sq. cm and temperatures up to 200° C., for tanks and instruments which contain or are driven by water, oil, kerosene and chemically active liquids up to a rated pressure of 16 kilos/sq. cm, normal temperature.

The level indicator has a stuffing-box cock-type arm with a blowing cock. The glass pipe is protected by means of a metal pipe. The level indicators are supplied according to the drawing with a maximum centre-to-centre distance of 1500 mm. In case of larger distances a connection with a threaded fitting and a fixing flange (TS 134258) is used. The connection is effected by means of flanges. The cast-iron flanges are normally machined with a sealing ledge, the bronze ones being equipped with recesses. The flanges are drilled according to ČSN Jt 16 (i. e. Czechoslovak Standard Specification rated pressure 16).

If flanges of other types or non-bored ones are required, this fact should be mentioned separately in the order.

The arms of the level indicators are made of cast-iron, or bronze, the cones are made of non-ferrous metals. The exact selection of the material to be used will be determined by the manufacturer according to the fluid used. The pipe is made of glass ("Palex" type).

The arms of the level indicators are subjected to a strength test and water-tightness test by means of a water pressure of 25 kilos/sq. cm. The proper function of the mounted level indicator is tested by means of a working pressure of 16 kilos/sq. cm g.

The level indicators are supplied assembled, fitted with a glass pipe and a spare pipe, and are carefully packed. The non-machined surfaces are coated with a durable protective paint.

When ordering, please, quote: type number, rated inside diameter, centre-to-centre distance in mm, working pressure and temperature, kind of liquid to be used and its properties (and/or the dimensions of the flanges).

Example:

Level indicator TS 134255, rated inside diameter 15 mm, for methanol, 12 kilos/sq. cm, 25° C., L = 800 mm, non-bored flanges.

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PRAHA - CZECHOSLOVAKIA

ČOK 520317a - 5507

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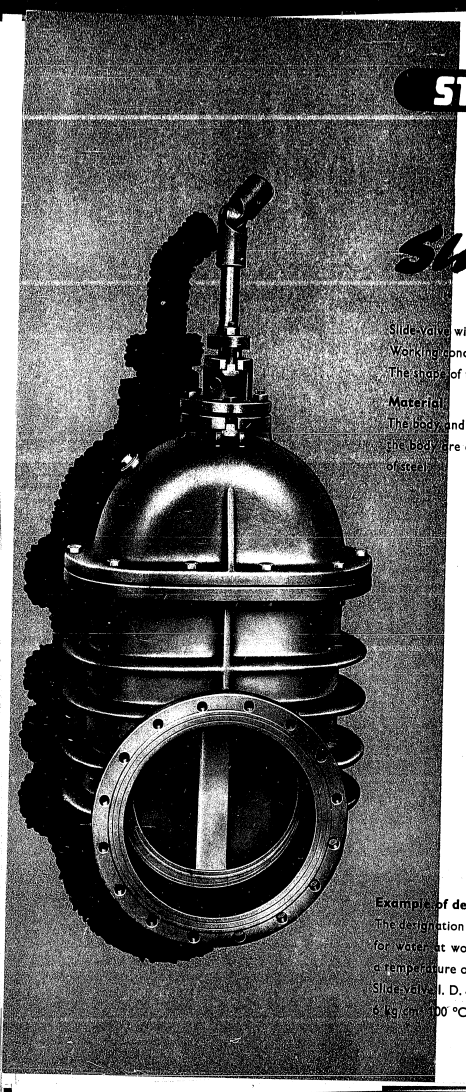


STROJEXPORT

Slide-valve 132/1-6

Slide-valve with wedge for water and gases.
Working conditions: up to 6 kg/cm², up to 120 °C.
The shape of the body is flat oval.

Material:
The body and the lid are made of cast iron, the faces of the body are of coloured metal, the wedge is made all of steel.

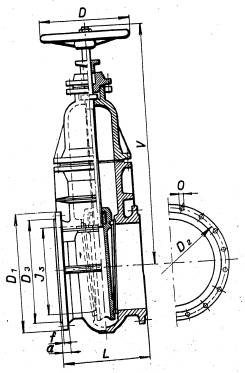
Example of designation:
The designation of the slide-valve of nominal dia 400 mm for water at working overpressure of 6 kg/cm² and at a temperature of 100 °C is as follows:
Slide-valve II. D. 400, rated pressure 6l-132/1-6 for water 6 kg/cm², 100 °C.

TABLE of DIMENSIONS (mm) and of WEIGHTS (kg)

I. D. (Js)	L	D_1	D_2	n	z	o	e	f	D_3	D	V	Weight
300	300	435	395	12	M20	23	24	4	365	350	780	170
350												
400	400	565	495	16	M20	23	28	4	465	400	960	240
500	500	640	600	20	M20	23	30	4	570	500	1145	400
600	600	750	705	20	M24	28	30	5	670	600	1450	670
650	650	805	760	20	M24	28	32	5	725	600	1675	780

Delivery specification: Slide-valves rated pressure 6 are currently delivered with hand wheel. At the request of the customer they can be delivered with the joint which enables distance hand-control.

In case that a special quality of the armature is not required it will be delivered in the guaranteed quality.



n..... number of holes
The drawing is not binding for the design office.

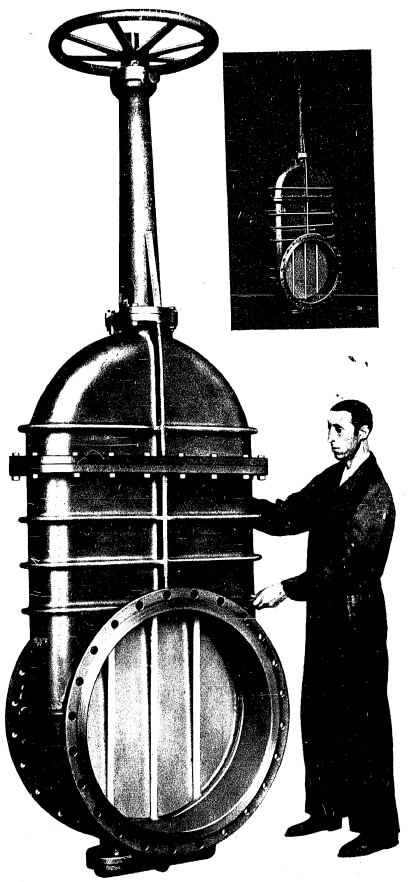
STROJEXPORT

PRAHA-CZECHOSLOVAKIA

Printed in Czechoslovakia

COK 520012 a - 5507

STROJEXPORT



SLIDE-VALVE WITH STRAP AND CLEANING LID MTS 133794

Slide-valve with cleaning lid MTS 133794 serves for handling of vapours and pure gases.
The spindle is provided with an external thread and the slide-valve with non-rising hand wheel. The cleaning lid enables an easy removal of deposited impurities so that the internal mechanism is not exposed to overwear.
Working conditions:
I. up to 2,5 kg/cm², up to 120 °C.
II. up to 2 kg/cm², up to 150 °C.

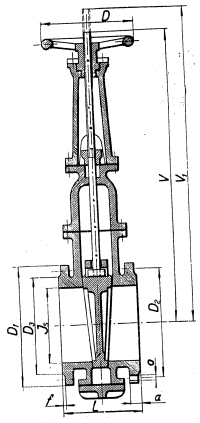
Material
The body, the lid and the strap of the slide-valve are made of cast iron.

Example of designation
The designation of the slide-valve with strap and with cleaning lid of nominal dia 300 mm for gas at working overpressure of 2 kg/cm² and at temperature of 20 °C is as follows:
Slide-valve with strap and cleaning lid Js 300, Jt 2,5/I-136/2-2,5 U for gas 2 kg/cm², 20 °C.

TABLE of DIMENSIONS (mm) and of WEIGHTS (kg)

Js	L	D_1	D_2	n	o	a	D_3	f	D	V	V_1	Weight
300												
350	290	485	445	12	23	26	415	4	320	1250	1455	290
400	310	535	495	16	23	28	465	4	320	1425	1660	350
500	350	640	600	20	23	30	570	4	400	1715	2010	485
600	390	750	705	20	28	30	670	4	400	1800	2190	690
650	410	805	760	20	28	30	725	5	500	1850	2280	860
700	430	655	810	24	28	30	775	5	500	1890	2330	1000
800	470	970	920	24	32	30	880	5	640	2560	2995	1130
900	510	1070	1020	24	32	30	980	5	720	2785	3260	1600
1000												
1100	590	1270	1220	28	32	30	1180	5	800	3005	3605	2400
1200	630	1370	1320	32	32	30	1280	5	800	3680	4345	2800
1400	710	1570	1520	36	32	30	1480	5	1000	4190	5350	3700
1600												
2000												

The drawing is not binding for the design office.



Delivery specification

Slide-valves with strap and with cleaning lid MTS 133794 are delivered with drilled flanges, provided with sealing ledges. In case that a special quality of the armature is not required it will be delivered in the guaranteed quality.

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ČOK 320014 a - 5506

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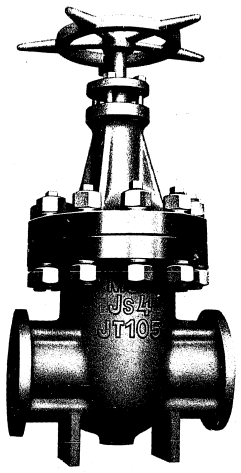


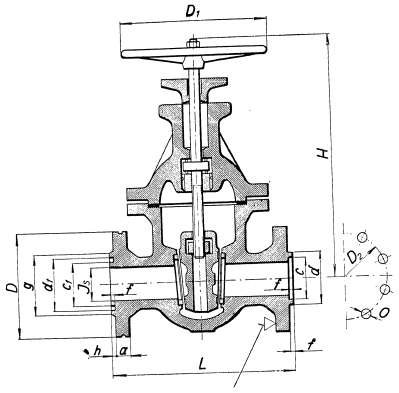
Petroleum-Line Slide-Valve

Pp 100

Pipe-line slide-valve Pp 100 serves for handling of gases and petroleum products at highest temperature of 120° C and at working pressure up to 100 kg/cm².

The sealing capacity of the wedge is tested by petroleum at a pressure of 100 kg/cm². The body is tested on strength by petroleum at a pressure of 150 kg/cm².

Material: The body, the lid, the wedge, the hand wheel and the packing-box of the pipe-line slide-valve Pp 100 are made of cast iron, the chromium-plated spindle is made of steel, the screw-nut of the spindle is of bronze. Sealing rings electrically welded stainless steel, the sealing element between the body and the lid is made of copper.



Machined for screw-nuts.

Table of dimensions (mm) and of weights (kg).

Dia "Js" mm	Dia "Js" Inch	L	D	D_1	D_2	g	a	c	c_1	d	d_1	n. o	f	h	H	Weight
50	2"	256	175	250	130	100	28	72,5	71,5	87	88	8,21	6	4	450	58,—
80	3"	286	210	300	160	128	32	100,5	99,5	115	116	8,21	6	4	480	85,—
100	4"	386	250	400	195	160	36	128,5	127,5	144	145	8,21	6	5	640	140,—
150	6"	446	320	450	255	215	44	180,5	179,5	198	199	8,27	6	5	750	275,—

Example of order: Petroleum-line slide-valve Js 2", according to table Pp 100.

STROJEXPORT

PRAHA - CZECHOSLOVAKIA

ČOK - 520002 a - 5507

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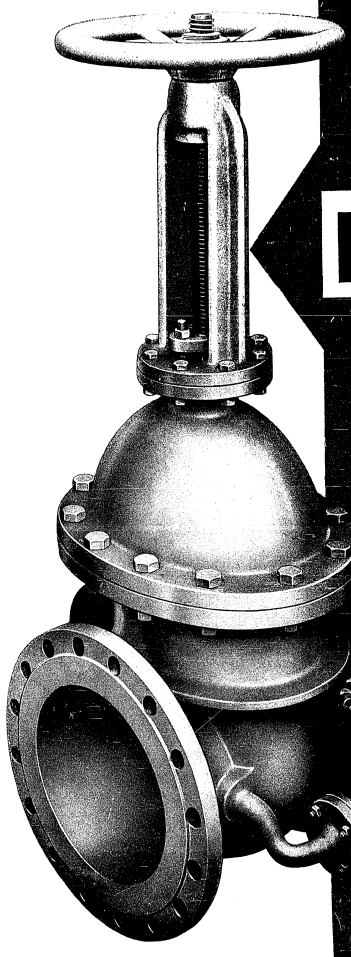

TABLE OF DIMENSIONS (mm) AND OF WEIGHTS (kg):

Js	L	V	V_1	D_1	D_2	n	o	a	D_3	f	L	by-pass Js_1	by-pass L_1	Weight
200	400	870	1090	355	310	12	27	30	259	5	400	20	320	170
250	450	1050	1310	420	370	12	30	32	312	5	400	20	340	260
300	500	1150	1470	480	430	16	30	34	363	5	450	25	370	350
400	600	1550	1990	610	550	16	33	40	473	5	640	25	400	600
500	700	1550	1990	725	660	20	36	44	575	5	640	25	420	790

For Js 40–150 choose the slide-valves according to Jt 40. – n = number of holes

The figure is not binding for the design office.

DELIVERY SPECIFICATION:

Slide-valves with strap are delivered with drilled flanges and for working conditions I–III they are provided with rings. Slide-valves for working conditions IV and more are delivered with polished sealing ledges, from Js 100 on they may be provided also with a by-pass passage. Slide-valves may be delivered with an outlet valve, which serves as a pressure balance for easier control under service conditions and for an easier lifting of the slide-valve.
In case that a special quality of the armature is not required it will be delivered in the guaranteed quality.

STROJEXPORT

PRAHA – CZECHOSLOVAKIA

ČOK 52003 a - 5505

Printed in Czechoslovakia

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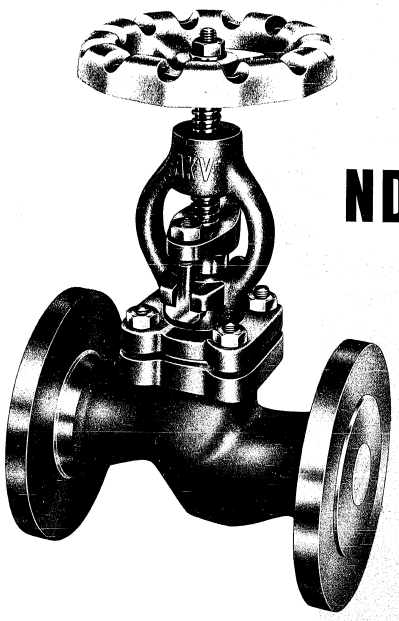


ND 15, 20, 25

ND 15, 20, 25 STOP VALVE

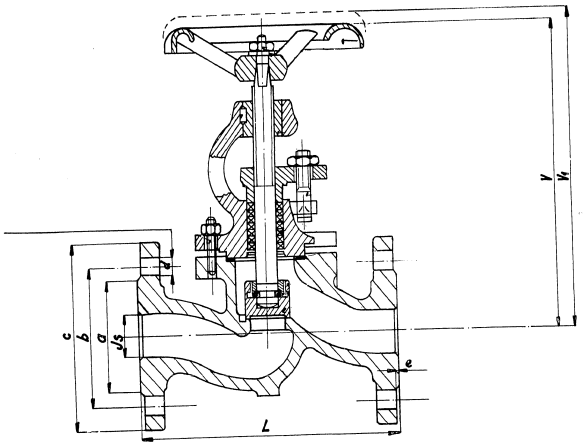
This Flange Stop Valve is especially suitable for:

nitric gases, nitric acid concentrated to 60% at a temperature of 100° C (212° F),

hot sulphuric crude oil up to 270° C (518° F),

other chemicals, which are chemically less active than those stated above.

The body and the stirrups are made of AKV 014 austenitic steel. To maintain the austenitic structure all castings are treated in the foundry at a temperature of 1050—1100° C (1922—2012° F).



Mounting and Application

When fitting the valve to the pipe the arrow pointing to the body should indicate the flow direction of the medium. The valve is closed by turning the wheel to the right. It should be opened slowly and carefully. If the valve seat sealing is not sufficient, the cover of the valve should be removed and the seat with the cone thoroughly wiped out. If the sealing leaks around the spindle, the sealing of the stuffing box should be replaced or fitted with an asbestos-cement cord. The valve should be heated, and the nuts by means of which the valve cover is held fast uniformly tightened.

Testing

The tightness of the valve closing and its strength are tested according to the respective test pressures in conformity with Czechoslovak Standards ČSN 13360. The air tightness of the upper closure is tested under water if required by the customer.

Welded counter-flanges with sealing, bolts and nuts are supplied on special order.

Dimensions and Weight

	Nom. Dia.	Type	L	V	V_1	a	b	c	d	e	Weight
mm	15	V91.3	130	200	210	45	65	95	14	2	5.3 kg
in.	0.5906		5.1181	7.874	8.2677	1.7717	2.5591	3.7402	0.5512	0.0787	11.7 lb.
mm	20	V91.2	150	200	210	58	75	105	14	2	5.3 kg
in.	0.7874		5.9055	7.874	8.2677	2.2835	2.9528	4.1339	0.5512	0.0787	12.8 lb.
mm	25	V91.1	160	200	210	68	85	115	14	2	6 kg
in.	0.9843		6.2992	7.874	8.2677	2.6772	3.3465	4.5276	0.5512	0.0787	13.2 lb.

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ČOK 53760 x — 5507

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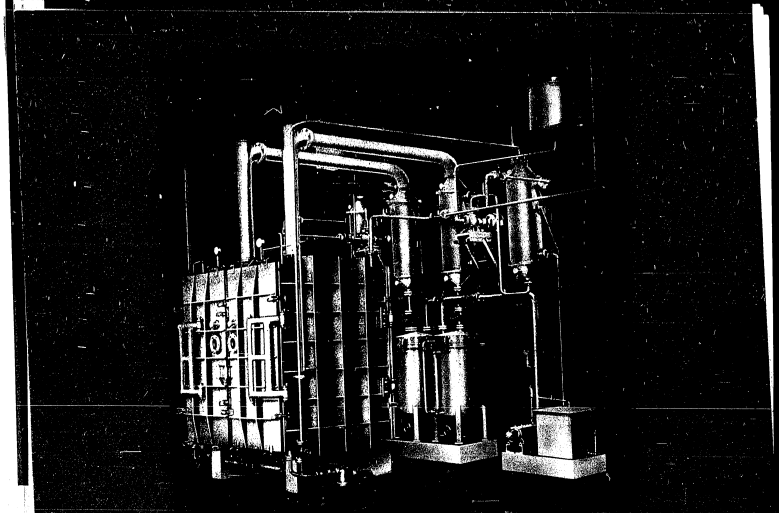
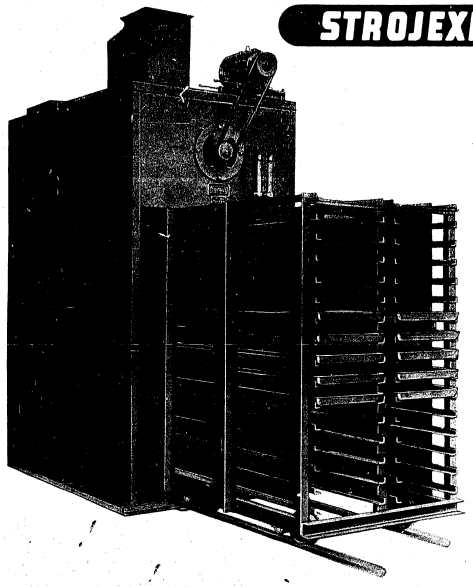


VACUUM DOUBLE-CHAMBER DRYER

STROJEXPORT



THE SINGLE BOX STEAM DRYER

This dryer is intended for drying chemicals, starch, cereals, vegetables, fruit, forest produce, etc. The individual products are dried on trays or racks. The dryer is steam heated.

The equipment of the dryer contains:

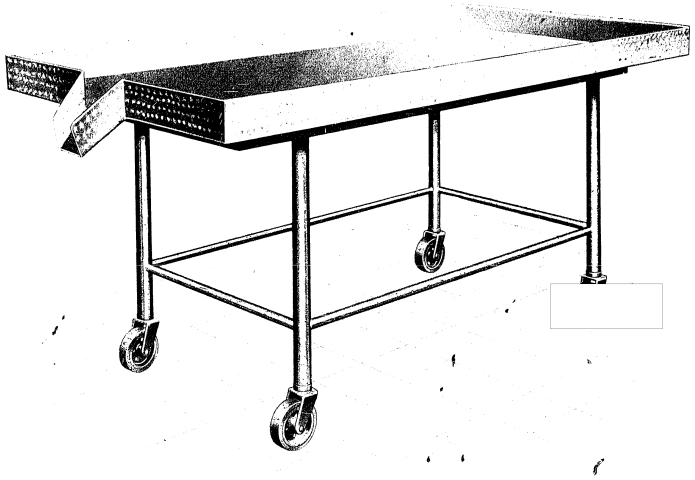
- an axial ventilator, driven by means of an electromotor with vee belts; the motor is placed on the box ceiling.
- a steam air heater.
- a central throttle for air circulation control with adjusting device, a thermometer and a psychrometer.

Technical data:

Operational space – – approx. 2 m³ (2.616 cub. yards)
Width – – – – – – 1040 mm (41 in.)
Height – – – – – – 1685 mm (66.5 in.)
Depth – – – – – – 1300 mm (51.2 in.)

Output of electromotor – – – – – 1.85 kW
Maximum drying temperature – – – 120°C at 8 atm. g.
Maximum pressure – – – – – – – 8 atm. g.
Heating output – – – – – – – – – 45,000 kcal/hour

ŠKODA CHEESE MAKING TABLE



The cheese making table consists of a plate made of 99,5 per cent. aluminum sheet, with edges lifted up 50 mm and an overflow edge for whey drainage in the middle of the shorter side. The table plate is fitted on a solid welded undercarriage having four steerable wheels provided with rubber tyres. The undercarriage is painted in grey.

Type	Dimensions mm/inch			Weight kg/lbs		Shipping space m³/cub. f.	Remark
	length	width	height	net	gross		
ST-1	1500 4'11"	900 2'11"	850 2'9"	65 143	80 176	1,2 42	
ST-2	1800 5'11"	1000 3'3"	850 2'9"	70 154	90 198	1,6 57	
ST-3	2000 6'7"	1000 3'3"	850 2'9"	80 176	100 220	1,8 64	
ST-4	2500 8'2"	1000 3'3"	850 2'9"	90 198	120 264	2,2 78	
ST-5	3000 9'10"	1000 3'3"	850 2'9"	105 232	140 308	2,6 92	
ST-6	4000 13'2"	1000 3'3"	850 2'9"	130 286	170 375	3,5 124	

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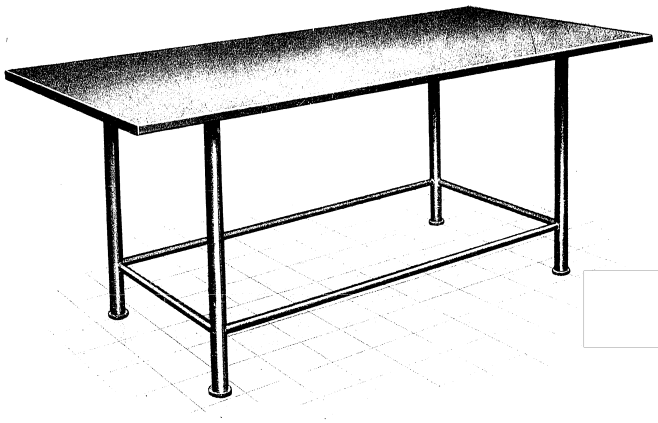
PACKING AND MANIPULATION TABLE



ŠKODA

The dairy packing table serves for packing butter and cheese, and can be used for packing of any kind.
A framed wooden board with parketed panelling coated with 99,5 per cent. aluminum sheet is fitted on a stable iron standard painted in grey. On special request a table with steerable wheels can be supplied.

Type	Dimensions mm/inch			Weight kg/lbs		Shipping space m³/cub. f.	Remark
	length	width	height	net	gross		
BS-1	1500 4' 11"	900 3'	850 2' 10"	46 102	60 132	1,2 42	
BS-2	1800 5' 11"	900 3'	850 2' 10"	52 115	70 154	1,4 49	
BS-3	2000 6' 7"	1000 3' 3"	850 2' 10"	62 137	80 176	1,7 60	
BS-4	2500 8' 2"	1000 3' 3"	850 2' 10"	80 176	100 220	2,2 78	
BS-5	3000 9' 10"	1000 3' 3"	850 2' 10"	95 209	120 264	2,6 92	

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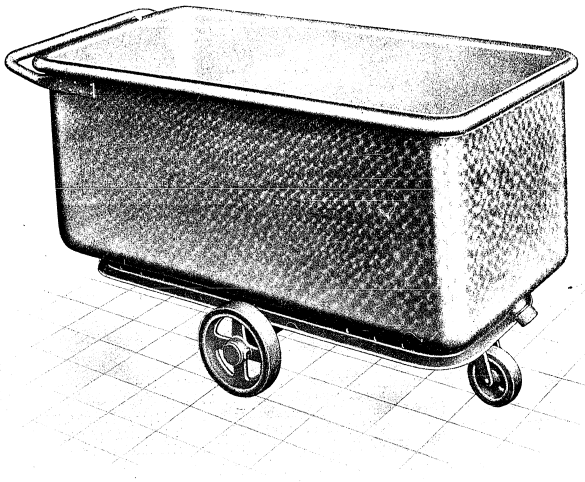
ŠKODA

BUTTER AND CURD TRUCK



The truck is used in dairies for milk and curd transport, but is suitable also for the transport of other food-stuffs.

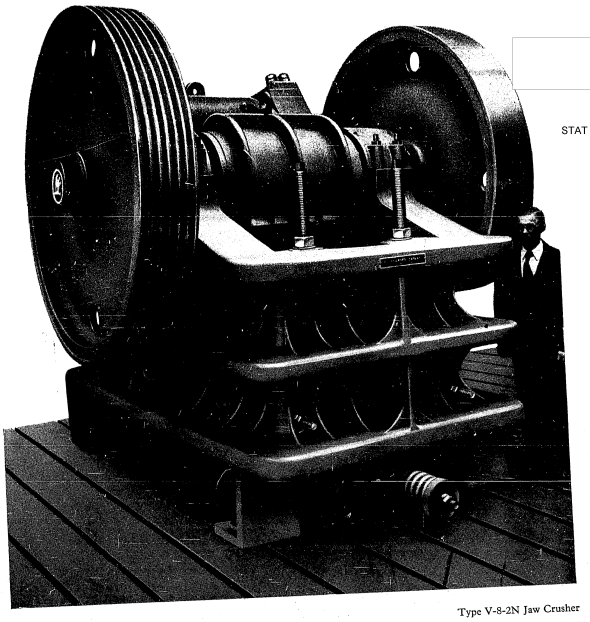
The sturdy welded undercarriage is provided with four wheels two of which are steerable so that the truck is easily handled. All wheels are equipped with rubber tyres. The truck tub is made of 99,5 per cent. aluminum, and all its edges are well rounded to make the cleaning easier. On the lowest spot of the truck bottom there is a drain branch with a screw plug. The edge of the truck tub is reinforced, and a handle bar provides for easy steering. The inside of the tub is pickled and the outside surface provided with ring-like ornamentations. The iron parts of the undercarriage are painted in grey.

Type	Capacity kg/cwt	Dimensions mm/inch			Weight kg/lbs		Shipping space m³/cub. f.	Remark
		length	width	height	net	gross		
PV-2	400 8	1300 4' 3"	600 2'	770 2' 6"	80 176	105 232	0,5 18	

STROJEXPORT

DOUBLE TOGGLE JAW CRUSHERS

WITH ROLLER BEARINGS



Type V-8-2N Jaw Crusher

for crushing basalt, granite, porphyry, syenite, quartz, diorite, lime stone, ores, etc. The type V-2N high-capacity jaw crushers fitted with roller bearings are high-speed units of modern design made of high-grade materials offering the following outstanding features

High efficiency
Small weight
Small power input
Negligible lubricating oil consumption
Long life of roller bearings

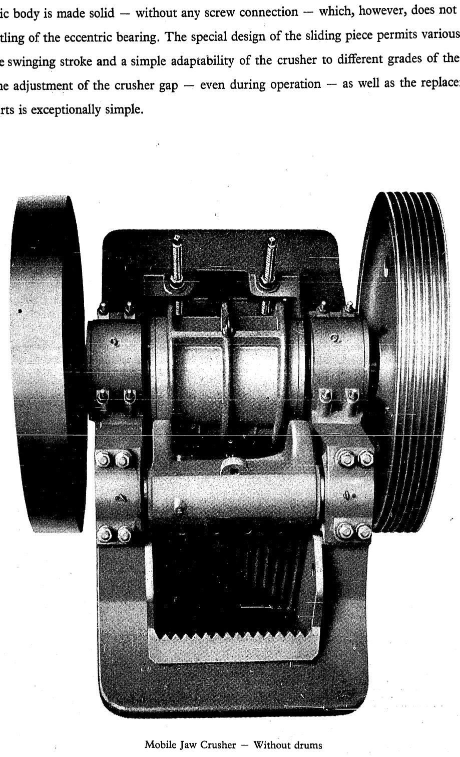
DESIGN

The main parts of the crusher, i. e. frame, swinger and eccentric made of high-grade cast steel have a suitable ribbed shape and are specially heat-treated to prevent their inner tension.

The crushing jaws and side wedges, made of wear-resisting hard steel, are easily removable.

The eccentric shaft of ample size is of special case-hardened steel and runs in 4 double-row self-aligning roller bearings.

The eccentric body is made solid — without any screw connection — which, however, does not hamper easy dismantling of the eccentric bearing. The special design of the sliding piece permits various adjustments of the swinging stroke and a simple adaptability of the crusher to different grades of the treated material. The adjustment of the crusher gap — even during operation — as well as the replacement of worn out parts is exceptionally simple.



Mobile Jaw Crusher — Without drums

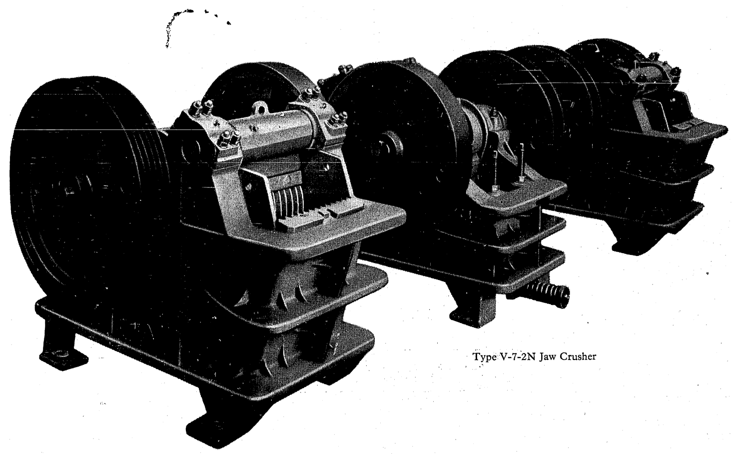
DIMENSIONS AND WEIGHTS

Size No.			V-3-2 N	V-4-2 N	V-5-2 N	V-6-2 N	V-7-2 N	V-8-2 N	V-3-2 NP	V-4-2 NP
Design			Stationary						Mobile	
Mouth opening	Width	mm in	320 1'19/32"	400 1'3 3/4"	500 1'7 11/16"	640 2'1 13/64"	800 2'7 1/2"	1000 3'3 3/8"	320 1'19/32"	400 1'3 3/4"
	Length	mm in	200 7 7/8"	250 9 27/32"	320 1'19/32"	400 1'3 3/4"	500 1'7 11/16"	600 1'11 5/8"	200 7 7/8"	250 9 27/32"
Driving flywheel	Diameter	mm in	940 3'1"	1175 3'10 17/64"	1250 4'1 7/32"	1500 4'11 1/16"	1600 5'3"	2000 6'6 47/64"	900 2'11 7/16"	1100 3'7 5/16"
	Width	mm in	100 3 15/16"	120 4 23/32"	140 5 33/64"	200 7 7/8"	260 10 15/64"	300 11 13/16"	100 3 15/16"	120 4 23/32"
	Speed r. p. m.		400	375	350	325	300	250	400	375
Pover input (depends on hardness and structure of material treated)		HP	9—10	13—15	20—25	32—40	48—56	68—75	9—10	13—15
Output per hour with a gap of 2 3/8" (depends on hardness and structure of material treated)		cn. m cn yd.	4—6 5.2—7.8	6—9 7.8—11.8	10—15 13.1—19.6	16—24 20.9—31.4	24—35 31.4—45.8	35—50 45.8—65.4	4—6 5.2—7.8	6—9 7.8—11.8
Approximate space required	Length	mm in	1285 4'2 19/32"	1620 5'3 25/32"	1850 6'63/64"	2225 7'3 19/32"	2900 9'6 11/64"	3540 11'7 3/8"	1910 6'3 13/64"	2250 7'4 37/64"
	Width	mm in	1010 3'3 49/64"	1230 4'27/64"	1520 4'11 27/32"	1875 6'1 13/16"	2220 7'3 13/32"	2560 8'4 25/32"	1080 3'6 33/64"	1360 4'5 35/64"
	Height	mm in	1110 3'7 45/64"	1340 4'4 3/4"	1525 5'3/64"	1920 6'3 19/32"	2320 7'7 11/32"	2800 9'2 15/64"	1460 4'9 31/64"	1580 5'2 13/64"
Weight net. approx.		kg lb	1750 3858	3300 7275	5200 11464	9600 21164	18100 39903	29400 64815	2350 5181	4000 8818
Suitable size of	screening drum, dia.	mm in	700 2'3 9/16"	800 2'7 1/2"	900 2'11 7/16"	1000 3'3 3/8"	1250 4'1 7/32"	1600 5'3"	—	—
	vibratory screen, width	mm in	500 1'7 11/16"	500 1'7 11/16"	750 2'5 17/32"	750 2'5 17/32"	1000 3'3 3/8"	1000 3'3 3/8"	—	—

Particulars of high-capacity vibratory screens or screening drums are given in special prospectuses, Ref. Nos 420,104 and 420,105. The listed power inputs and outputs depend on the properties of the material and the required grade of reduction. Owing to the non-constant power input the respective driving engine should have a capacity 30—40 percent higher than that listed above. In your inquiries please specify the properties (hardness) of the material, size of pieces, the required output per hour as well as the size of grain of the finished product.

Flywheel with smooth rims

Flywheels with grooves for V-belts



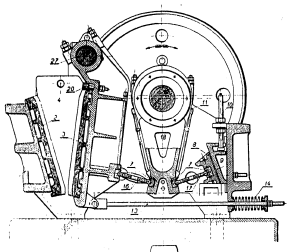
Type V-7-2N Jaw Crusher

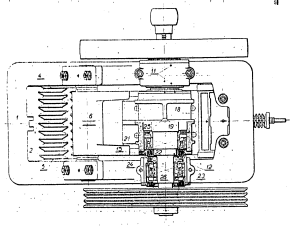
LUBRICATION

The type V-2N crushers need practically no attendance to the lubricating system. The labyrinth-sealed self-adjusting roller bearings are provided with grease compartments to be replenished after long intervals.

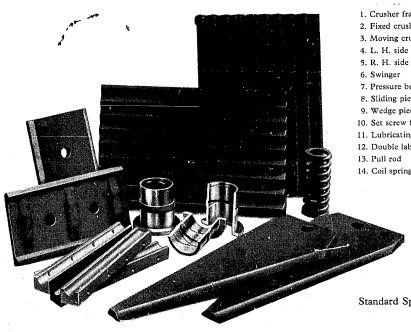
DRIVE

The machines are driven by Diesel engines or electric motors, in rare cases by steam engines. As a rule power is transmitted by a belt upon one of the flywheels, either directly from a power unit or through a line shaft. Lately use has been made of V-belts which offer the advantage of a short centre-to-centre distance of pulleys and a high transmission ratio.





1. Crusher frame
2. Fixed crusher jaw
3. Moving crusher jaw
4. L. H. side wedge
5. R. H. side wedge
6. Swinger
7. Pressure bushes
8. Sliding piece
9. Wedge piece
10. Set screw for wedge piece
11. Lubricating nipple
12. Double labyrinth ring
13. Pull rod
14. Coil spring
15. Labyrinth flange for eccentric ring
16. Front toggle plate
17. Rear toggle plate
18. Eccentric body
19. Eccentric shaft
20. Wedge for moving crusher jaw
21. Radial roller bearing of eccentric
22. Insert for changing the stroke
23. Labyrinth flange of side bearing
24. Radial end roller bearing
25. Sealing ring
26. Labyrinth ring of end bearing
27. Swinger bush
28. Swinger shaft



Standard Spares for a Jaw Crusher

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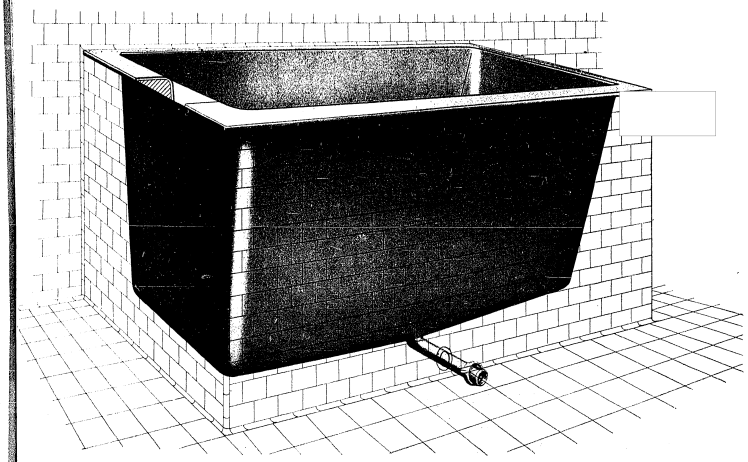

MILK TANK FOR RECEIVING AND STORAGE

The milk receiving tank is welded of aluminium plate of a purity 99.5%. The welded joints are cleanly machined on both sides and tested for tightness. The bottom has a considerable slope from three sides to the outlet which enables a perfect emptying of the vessel. The outlet branch has a dia. of 50 mm and is provided with a dairy type screw pipe joint. The tank has well rounded edges and corners enabling a thorough cleaning of same. The brim of the vessel is 60 mm wide and its shape is arranged for tiling-up. Double type of these tanks will be supplied upon request.

Type	Capacity l/gall	Dimensions mm/inch			Weight kg/lbs		Shipping space m³/cub. f.	Remark
		length	width	height	net	gross		
NAP-4	400 88	1350 4' 5"	750 2' 6"	630 2' 1"	21 46	40 88	0,7 25	
NAP-6	600 132	1690 5' 7"	920 3'	630 2' 1"	25 55	50 110	1,0 35	
NAP-10	1000 220	2220 7' 3"	1120 3' 8"	630 2' 1"	42 93	70 154	1,6 57	
NAP-16	1600 350	3220 10' 7"	1120 3' 8"	630 2' 1"	86 190	115 253	2,3 81	
NAP-25	2500 550	3470 11' 5"	1570 5' 2"	630 2' 1"	128 282	160 352	3,4 120	

Type	Capacity l/gall	Dimensions mm/inch			Weight kg/lbs		Shipping space m³/cub. f.	Remark
		length	width	height	net	gross		
NAU-10	1000 220	1790 5' 10"	1020 3' 4"	1000 3' 3"	42 93	70 154	1,8 64	
NAU-16	1600 350	2320 7' 7"	1220 4'	1000 3' 3"	86 190	115 253	2,9 102	
NAU-25	2500 550	3320 10' 11"	1220 4'	1000 3' 3"	128 282	160 352	4,1 145	
NAU-40	4000 880	3320 10' 11"	1670 5' 6"	1000 3' 3"	152 335	190 418	5,6 198	
NAU-63	6300 1400	4220 13' 10"	1970 6' 6"	1000 3' 3"	215 473	270 594	8,4 297	

The milk storage tank is of the same design, but here the brim is 110 mm wide and is arranged for insulation and tiling-up.

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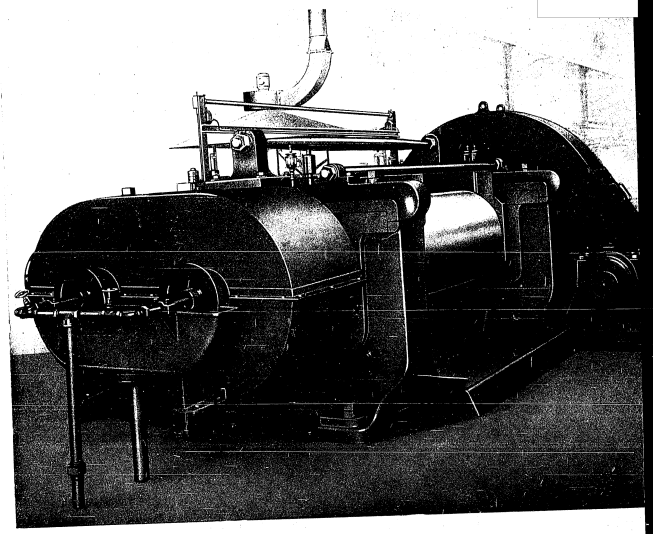
Present Exporters: STROJEXPORT

Ref. No. 490046

Enquiries and Export:
KOVO LIMITED, METAL & ENGINEERING PRODUCTS AND RAW MATERIALS TRADING COMPANY
PRAHA - CZECHOSLOVAKIA

TWO ROLL WARMING & MIXING MILL NO. 10287



TWO ROLL WARMING & MIXING MILL NO 10287 ∅ 650×2100 MM

This Mill is designed to break down or plasticate crude and synthetic rubber, mix and warm-up rubber stocks and sheet stock from Rubber Mixer.

The following types of the Mill may be supplied:

10287/P7 — peripheral speed of rolls 26.8 : 23 metres/min. — designed to treat synthetic rubber.

10287/P8 — peripheral speed of rolls 31.6 : 27.2 metres/min. — to break down crude rubber, warm-up and plasticate rubber stock.

10287/P9 — identical with type 10287/P7 except for the motor which is mounted on a special plate.

10287/P10 — identical with type 10287/P8 except for the motor which is mounted on a special plate.

OPERATION:

The material is fed between the rolls little by little. The rolls revolve in oposite direction towards each other and at different rotating speeds. The material gets masticated between the rolls and it is carried on the front roll which operates faster than the rear one. During this mastication it is necessary to cut several times the material, to wind it up, and to feed it between the rolls once more, in order to achieve a proper compounding. The masticating time should be determined by the factory's laboratory and will depand on the character of the stock treated and on the purpose for which it is intended. On completion of the process, the treated material is cut away from the front roll in slabs or in sheets, according to the equipment available for cooling the material.

GENERAL SPECIFICATIONS:

ROLLS	Chilled cast iron. Surface hardened — 500° Br. ≈ ⊥ — 25°„ — ground and polished. Length of working surface 2100 mm, diam. 650 mm. Roll neck journal diameter 420 mm, journal length 455 mm.
ROLL ADJUSTMENT	Two square thread adjusting screws seated in cast iron nuts. The movement of screws is carried out by turning hand wheel. The roll gauge opening is shown on a scale.
FRAME	Fine-grained cast iron. Side frames of cast steel. Heavy construction.
BEARING BLOCKS	Cast steel. Lined with compound cast bushings.
SCRAPE PLATES	Adjustable, incessantly adhering to the roll surface, preventing the escape of material out of rolls.
GEARING	Grey cast iron gear box. Wheels with surfaces hardened, cut helical teeth, roller bearings provided. Large driving wheel made of cast steel. Driving pinion seated in antifriction metal plain bearings substancially lubricated. Connecting gears with cut spur type wheels. All gear mechanisms statically balanced. Gears accurately machined. Guards provided over all gears.
SAFETY MECHANISMS	Very efficient band brake — mounted on primary reduction gearing of the gear box, enabling to stop the Mill quickly and whenever, mechanically operated and during operation released by electro-magnet. This is engaged either by pressing foot pedal — placed in front of the Mill — or by pulling down the trip bar arranged above the rolls. Pressure safety discs — fitted on both sides between adjusting screws and bearing blocks, built for max. pressure 100.000 kg on roll neck journal, breaking after unexpected increase of the pressure between rolls, thus protecting them against damage. Exchange of these safety discs is simple and easy.
COOLING	Rolls machined inside for uniform cooling. Water supply and discharge arranged on the right hand side of the Mill. Individual supply valves provided for each roll. The maximum temperature of supplied water must not be above 25°C.
LUBRICATION	Central automatic lubricating apparatus. Gear box and bearings arranged with oil baths.
BASE PLATE	Cast iron. Heavy box construction. The base plate is to be grouted into concrete foundation, without using foundation bolts.
LIGHTING	Proper lamp 24 V — arranged above the roll bite.
SPARE PARTS	All machine parts are interchangeable and manufactured in metric system according to the standards of ISA.
PIPING	The Mill normally is equipped with all internal piping. No other external piping provided.

STANDARD EQUIPMENT — included in the price of the machine:

Tool box.

Electric driving motor — according to the customer's order:
either — Squirrel cage motor with starting clutch, 110 kW, 960 RPM, approx. weight 1115 kg
or — Slip ring motor 120 kW, 950 RPM, approx. weight 860 kg
Oil starter with oil charge, approx. weight 220 kg (oil charge 110 kg)

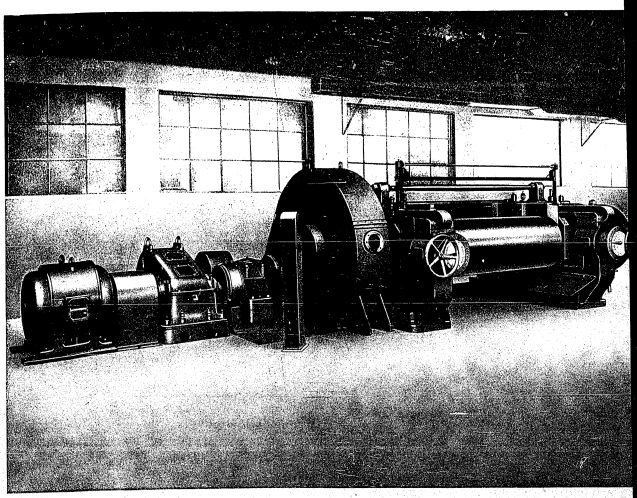
Electric equipment incl.: Two lamps 24 V,
Ammeter stand,
Electro-magnet — actuating the brake,
Double push-button,
Door contact.

We normally supply 3-phases electric motors for 3×380/220 V, 50 c/s, with electric equipment 3/380 V, in conformity with standards of ESČ (Czechoslovak Electric Association). Should electric motor and electric equipment for another system of electric current be required, or in conformity with other standards, the price difference of such special execution will be charged as an extra.

SPECIAL EQUIPMENT — supplied on special order and charged as an extra:

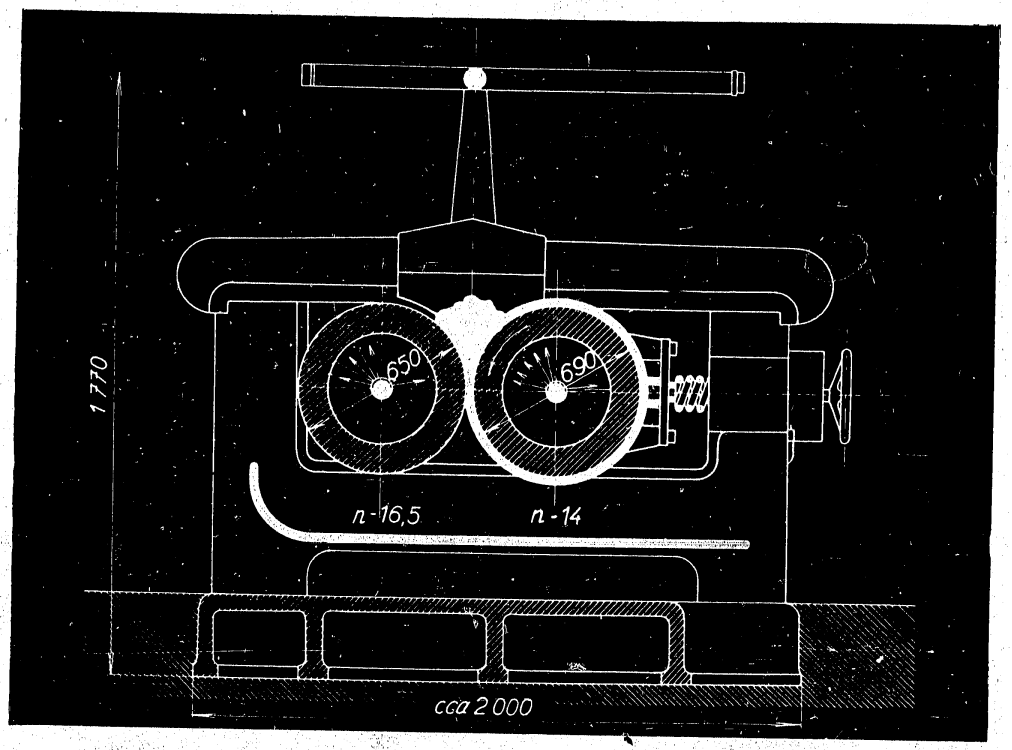
Va — Right-hand Cutting Equipment — for cutting stripes from the treated stock

Vd — Left-hand Cutting Equipment — for cutting stripes from the treated stock



IN YOUR ORDER KINDLY STATE:

1. Name and No. of the machine and quantity of units ordered.
2. Name and number of Special Equipments.
3. Kind, voltage and frequency of the electric power available (whether 1-, 2-, or 3-phase, A. C. or D. C.).
4. Working conditions which might influence the electric equipment (ambient temperature, humidity, tropical climate, whether squirrel cage motors may be started, etc.).



TECHNICAL DATA:

Machine output	approx. 240 kg of stock/hour
One batch	approx. 80 kg
Friction ratio of rolls	1 : 1.16
Cooling water pressure	1 to 3 atm.
Cooling water supply pipe	dia. $1^1/_2$"
Cooling water discharge pipe	dia 65 mm
Cooling water consumption	approx. 2400 litres/hour
Machine main dimensions	8700×3000 mm, height 1790 mm
Machine total weight	42.960 kg
Rail-way packing: weight	1.544 kg
Seaworthy packing: capacity	approx. 24 cu. m.
weight	2.200 kg

As improvements in design are continually being made, this specification is not to be regarded as binding n detail and tech nical data are subject to alteration without notice.

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